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Irish Warlords

English Civil War Firelocks

Arnhem Book Feature

Culloden Feature Film





Front cover
Irish warlord Murchad duels with Viking chieftain Sigurd during the battle of Clontarf in 1014. Detail of painting by Angus McBride, courtesy Carroll Insitute



Back cover
Duke of Cumberland and staff recreated for the Culloden feature film 'Chasing the Deer'

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Idiot Nephew

While I broadly agree with the points raised by Dr. Nicolle in his letter (MI 72). I feel that his remarks on academics' (jocularly referred to as 'lefties') attitudes to military history require comment.

First the position of military history in relation to other types of history should be explained. Political history could be described as the mainstream, with social history coming in a close second, and economic history coming in third place. However, military history is somehow the unwanted idiot nephew.

Why is this so? There are a number of reasons for this. First it is often written by people with the wrong sort of initials after their name (i.e. decorations not degrees). While some very good military history has been written by military men, there has also been some truly abysmal offerings as well. This accounts for the snobbery element. Equally it is more than a little unfashionable. What evidence is there for this? The reader is invited to inspect the so-called 'quality' press' book reviews. One particularly salient example springs to mind. A respected historian of the Jacobean period wrote a history of the English Civil Wars. A reviewer

castigated him for writing military history. Perhaps, the absence of 'Refereed Journals' in the field is a contributory factor. A refereed journal, for the uninitiated, is a journal where the editorial board pass a contribution over to an anonymous referee for scrutiny. I am not sure whether Military Illustrated should be such a journal, as this might be over-restrictive.

The climate is hopefully changing so this arbitrary discrimination will end. However it is important to remember that military history itself is not a monolith.

Magnus Guild,
Edinburgh

Ashton Volunteer Cavalry

The correspondence in MI regarding the Ashton Volunteer Cavalry has prompted me to add further information. The first commissions were dated 2nd June 1798 and the captain was William Gerard who became the 11th baronet. He was born 12th July 1773, married Anna Maria Stapleton in December 1797 and died 2nd August 1826.

I own a guidon of the Loyal Ashton Light Dragoons which depicts shamrock for Ireland in the Union wreath, therefore after

1801. The field is blue, thus following the uniform described in the Willson Chart of 1806 which stated that Captain Sir William Gerard, Bart. Corps had blue faced red, silver lace and white breeches.

Although the reverse of the guidon has a Crown over 'GR' within the Union wreath and below the motto 'KING AND COUNTRY', the obverse has a large central roundel with the seated figure of Britannia. Both sides also include the painted coat-of-arms of Gerard, per pale with those of Stapleton his wife. To include the arms of a wife on a combatant regimental guidon seems somewhat unusual.

William Y. Carman,
Surrey

Zulu Dawn

Could someone please help in my search for a video recording of the 1980 film Zulu Dawn? It was only shown on TV once and has not been on video. Someone could have made a video recording and I would buy or make a copy from them.

Ken Ray,
Newcastle

Peninsular War competition

MIDAS BATTLEFIELD TOURS, specialists in pre-20th century battlefield tours, have reserved a place on their 'Over the Hills and Far Away' tour for the winner of the Military Illustrated Peninsular War competition. This exciting 8 day tour, which retails at £1099, follows Wellington's battles in the Pyrenees and the invasion of France from 1813 to 1814. The tour departs on September 17th 1994 and returns on September 24th 1994.

The tour will visit the battlefields of Vittoria, Sorauren, Maya, Roncesvalles, Vera, the Nivelle, Nive, Orthes and Tarbes. The towns of San Sebastian, Burgos, St Jean de Luz and Bayonne are also visited, whilst a highlight of the tour is a trip by cogwheel railway to the top of the spectacular 2,500 feet high mountain, La Rhune, from the top of which Wellington worked out his strategy for the battle of the Nivelle. A visit to the international museum of Hussars at Tarbes is also included.

The tour provides shared half board

accommodation in 3 and 4 star hotels and is accompanied by author Ian Fletcher, whose *FIELDS OF FIRE* (just published by SPELLMOUNT at £35) is being offered as a second prize to the two runners-up.

To enter the competition, answer the three multiple-choice questions below this month and the three questions in last month's MI and send your answers on a postcard or the back of a sealed envelope together with your name and address and a daytime telephone number to: Peninsular War Competition, Military Illustrated, 43 Museum Street, London WC1A 1LY. Overseas readers should use airmail postage. Your answers should arrive no later than August 19th 1994. The sender of the first correct entry drawn from all the entries received by this date will win the tour, the next two correct entries drawn will receive the runners-up prizes. The competition is open to all readers except employees of Military Illustrated and their immediate

relatives. The editor's decision on all entries is final and no correspondence can be entered into. The correct answers will be published in the September 1994 issue of MI. Winners will be notified. This month's questions:

1. Name the French governor of Bayonne who launched the sortie from the town in April 1814.
 - a). Barrie
 - b). Thouvenot
 - c). Rey
2. At which Spanish town was Wellington's chief engineer, Sir Richard Fletcher, killed?
 - a). San Sebastian
 - b). Tarifa
 - c). Burgos
3. On which river does Ciudad Rodrigo stand?
 - a). The Coa
 - b). The Guadiana
 - c). The Agueda

The Assassination of Reinhard Heydrich (Spearhead: E)
Albert Speer — The Last Nazi (Empire Entertainment: E)
The Unknown War (DD Distribution: E)

The Assassination of Reinhard Heydrich is a documentary made by husband-and-wife team Jan and Krystyna Kaplan. It was first broadcast by the BBC in 1992 to coincide with the fiftieth anniversary. The narration describes Heydrich's meteoric rise from disgraced naval officer to hated Reichsprotektor of Czechoslovakia. The assassination was the idea of President Eduard Benes of the Czech government-in-exile in Britain. Jan Kubis and Josef Gabčík were trained in SOE to form the Anthropoid team. They carried out the assassination as Heydrich rode in the unprotected front seat of an open limousine through a Prague suburb. This was accurately reconstructed for the documentary. There is film of the elaborate funeral arrangements, and the reprisals in the form of the destruction of Lidice. The narration describes the extraordinary betrayal which resulted in the SS laying siege to the church of St. Cyril and St. Methodius, the hiding place of the assassins and other resisters. This is illustrated with sequences from Jiri Sequens' 1964 feature *Assassination/Atentat*. The programme concludes that in spite of the thousands of deaths during the Nazi reprisals, the controversial assassination was worthwhile. Those interested in this fascinating documentary should contact Sally Faulkner at Spearhead, Wyvols Court, Swallowfield, Nr. Reading, Berkshire RG7 1PY or telephone 0734-880204.

Albert Speer — The Last Nazi concerns Hitler's official architect who became Reich Minister of Armaments. The



Dramatic reconstruction of *The Assassination of Reinhard Heydrich* filmed on location in Prague.

only top Nazi to plead guilty, he was sentenced to twenty years imprisonment at the Nuremberg trials. The programme was based on filmed interviews carried out by Patrick Watson in 1976 when Speer was seventy-one. He recalls his childhood memories of the humiliation of the Versailles Treaty, being a student and assistant professor of architecture in Berlin during the Weimar Republic, and his first meeting with Hitler. He was responsible for some of the staging of the Nazi Nuremberg rallies, and drew up grandiose plans for a new Berlin. He is quizzed about his relations with Hitler, his part in prolonging the war, and the use of slave labour. Speer claims to have travelled Germany to personally countermand Hitler's 'scorched earth' policy near the end of the war, planned to assassinate Hitler by pouring poison gas down a Berlin bunker ventilation shaft, and to have deliberately avoided finding out about the Final Solution. Those interested can contact Empire Entertainment on 0494-881033

(telephone and fax).

DD distribution have released four episodes of *The Unknown War*, a documentary series about the Eastern Front during the Second World War, narrated by Burt Lancaster. *The Siege of Leningrad* tells the story of the battle that continued for nine-hundred days. It well conveys the hardships endured by the soldiers and civilians who remained within the city, and includes film of the relief road across frozen lake Ladoga. *Stalingrad* tells the story of the infamous battle that took place during the winter of 1942, and resulted in the annihilation of General Von Paulus' 6th Army. The first part includes film of Russian civilians building defences, German aerial bombardment of the city and street-fighting in the rubble. The second part shows the massive Russian counter-offensive, the effects of the terrible winter, Von Paulus' surrender, victory celebrations and the rebuilding of the city. This double-episode tape lasts some 100 minutes: the remaining releases contain just

one episode. *Kursk* tells the story of Operation *Citadel*, Hitler's desperate attempt to crush a Russian salient in July 1943 which resulted in the biggest armoured battle in history. *The War in the Air* deals with the initial surprise attack which destroyed much of the Russian Air Force on the ground, to its rebuilding to a formidable force that eventually overwhelmed the Luftwaffe. There is film allegedly taken during a Soviet bombing raid on Berlin, women pilots, the French Normandy squadron, Russian aces and a veterans' reunion.

The series appears to be a Russian/Swiss co-production made in 1977, although the sleeve gives no indication of this. They contain much interesting and unfamiliar Russian and German footage, and include brief comments from veterans and modern colour sequences shot on location. It was supervised by famous Russian wartime newsreel photographer Roman Karmen.

Stephen J. Greenhill

Protect Your Books — a complete cleaning and refurbishing kit for both cloth and leather volumes, available from The Willingham Bindery, 11 Short Lane, Willingham, Cambridge, CB4 5LG, price £19.99 (U.K. only), overseas add £5 p&cp.

It is appropriate that while this is a book review section, we consider the necessity of book maintenance and conservation. This kit comprises a leather dressing to be applied sparingly, using the glove provided, to old leather book binding. I must stress *sparingly* and allow the dressing to soak in for a few hours then buff with a soft cloth. Similarly, there is an aqueous emulsion to be used on cloth bound and new leather books. Again, apply sparingly, using the glove, leave for a few hours and buff. In both cases the transformation of the book is amazing — it has an enhanced appearance and a good sheen.

Also with this kit is a dry cleaning pad for dirt removal (it does not remove biro, ink, cellotape stains, only dirt). Again, I found rubbing a grimy page with the pad removed the dirt effectively.

Max Sarche

The Army of Robert E Lee by Philip Katcher, published by Arms & Armour Press, 41/43 Strand, London WC2N 5JE, ISBN 1-85409-174-3. Hardback, 234 x 156mm, 320 pages, 70 photos/maps, price £20.00.

The American Civil War is a well documented conflict, but there is a disparity of coverage in favour of the Union Army and its Generals. This book helps to redress the balance. In addition, while there are bibliographies of the Generals, there is often scant coverage of the actual armies

themselves. This book deals with an examination of the organisation, the men and their weapons and the actual campaigns waged by the Army of North Virginia. This Confederate force was supremely confident with high morale and the author considers it to be one of the finest armies ever fielded.

Within this book's eleven chapters, comprehensive coverage is given to the Army's mission, Lee himself and his Generals, staff and soldiers, combat and support arms including infantry, cavalry, engineers, signals, medical etc. The performance of these units in action is examined as well as a listing of the various units, their equipment and commanders. Orders of battle are provided, that is, the composition of the various armies by unit, plus chapter notes and the comprehensive bibliography. An excellent book for the student of the American Civil War, well written and presented, at an affordable price.

M S

New Vanguard No. 7 IS-2 Heavy Tank 1944 — 1973

by S Zaloga published by Osprey Publishing Limited, ISBN 1-85532 396 6, price £6.99.

I was puzzled by the title, surely they meant JS-2 which I now gather is incorrect. The correct transliteration is Isoef Stalin (i.e. IS) for these Stalin tanks. In addition, the title is misleading — this book does not cover the IS-2 tank alone, but the entire IS series from 1944-1973.

The development of the IS tanks stemmed from the failure of the KV designs that were slow and unreliable and compared badly with the T34. The latter was inferior to the German Tigers, both in range and firepower. To combat the threat

the Russians produced the IS-1 and IS-2 with their massive 122mm gun. Whilst not as nimble as the Panther, they could nevertheless destroy them at 1,000 metres compared to 600 metres for the latter.

The IS-3 appeared at the end of the war, too late for combat and remained in production till 1955. A series of IS models were produced culminating in the T10 and were the cause of great concern to NATO, causing the development of the Conqueror and the US M103.

This book describes and illustrates rare models and prototypes, one which interested me was the Obiekt 279 with its strange hull shape with which it was hoped it would survive the nearby detonation of a tactical nuclear weapon. Also described are the various heavy assault guns built on the IS chassis, as well as missile launcher vehicles and engineer recovery vehicles. Mention is made of the Stalin tanks in foreign service and of course, the book contains some superb colour plates and a cut-away of an IS-2.

If you are interested in Russian armour, then this is the book for you.

On Secret Service East of Constantinople

by Peter Hopkirk. John Murray; ISBN 0-7195-5017-3; 431 pp; 32 b/w illustrations; bibliography and index; £19.99.

Peter Hopkirk has made his name as an historian by shedding light on the mysterious conflicts of Central Asia. This culminated in his impressive study of The Great Game. He has now shifted his attention to the First World War and the drive by both the Germans and Turks to foment revolt in Central Asia against British and Russian imperial domination. Germany wanted the British out of India and

Turkey wanted to liberate the Turks of Central Asia from the Tsar. The tools of this global game were spies and it is little surprising to learn that John Buchan wrote about this conspiracy in his thriller *Greenmantle*. Peter Hopkirk reveals the real story behind the spy novel and a fascinating read it is too, full of remarkable characters and dirty deeds. But more than just being a good read this book has a clear resonance today, for now the Soviet superpower is at an end, the Great Game is to be played again with both Turkey and Iran competing against each other to control the Turkic Muslim population of formerly Soviet Central Asia, with Russia and Germany resurgent and concerned about its Asian hinterland. This book reminds one of the fluid political state at the point where great powers meet and how the desire to establish frontiers and spheres of influence is the engine of conflict if not outright war.

English Civil War 1642-1651 an Illustrated Military History

by Philip Haythornthwaite, 246 x 189 mm, 160 pages, 32 colour plates, 100 black and white photographs, ISBN 1-85409-238-3, published by Arms & Armour Press, 41/47 Strand, London WC2N 5JE, price £16.99.

When I first saw a copy of this book I was immediately impressed by the sheer quality of its layout, its profuse illustrations and colour plates. The presentation of the text and illustration is quite outstanding and the publishers are to be congratulated for producing such a superb book. Within its 160 pages it contains a well written history of the two Civil Wars and the intervening period, together with details on the armies.

The English Civil War, A Living History by Paul Lewis Isemonger. Alan Sutton Publishing Ltd: ISBN 0-7509-05555-7; 144 pages. £9.99. This work, produced by a professional photographer, uses black and white photographs of re-enactors to illustrate the many varied aspects of the English Civil War. Divided into a number of sections covering the infantry, cavalry, artillery, camps and garrisons of the conflict, almost every aspect of the military side of the civil war is dealt with. The over two hundred photographs are each accompanied by a detailed text which not only explains the specific photograph but also provides some additional historical contextual material. Both the range and quality of the photographs is impressive. Those illustrated range from individual studies of specific figures, details on separate items of equipment and weaponry, along with more general shots displaying drills, skirmish and battle scenes. Few of the photographs are from public displays where the author has stood with the public, instead the majority are of re-enactors chosen for the quality of their representation with the shots being carefully set against an appropriate contemporary backdrop. Some of the cavalry and dragoon studies are particularly noteworthy for this. In many ways the quality of Isemonger's photographs reflect the tremendous amount of research and care that today goes into the clothes, equipment and weapons of re-enactors in this country. The individuals and regiments drawn from both the English Civil War Society and the Sealed Knot represented in the book, along with the manufacturers of the equipment, all deserve praise for taking the time to assist in the carefully staged shots in which not a single anachronism was spotted by this reviewer. For the general reader,

the black and white nature of the work along with the rather disappointing small size of some of the individual photographs may be off-putting at first glance, the colourful nature of the period inevitably being lost. While it is true that this work has been produced for enthusiasts, a more detailed perusal will reveal that the text and photographs provide one of the few accurate representations of the subject of the English Civil War which will make rewarding reading and viewing to anyone interested in the period.

Philipp J.C. Elliott-Wright

Equipements Militaires de 1600 a 1870, Tome X de 1852 a 1870 (Deuxieme partie) La Garde Imperiale by Michel Petard. Atelier Point-Virgule: ISBN: 2-9508073-0-5; 95 pages. 350 F (French).

This most recent addition to Michel Petard's series detailing the equipment of the French army since 1600 maintains the very high standards of the previous nine volumes. Each volume illustrates in immaculate detail the various items of personal equipment, belts, belt-plates, buckles, back-packs, etc, worn by the French soldier through the ages. This volume deals with the cavalry regiments and artillery of the Imperial Guard, plus a few miscellaneous items from the staff and Guard National during the era of the Second Empire.

The amount of detail is enormous, with not only very high quality black and white line drawings but with most illustrations also having a scale measurement alongside so that the precise dimensions of the item are specified. This therefore provides a unique reference source for anyone interested in the French Imperial Guard of the Second Empire, be one a general enthusiast, a collector wishing to

identify an original item, a model maker wishing to ensure accuracy or even a re-enactor wishing to produce an authentic reproduction.

Obviously, as the accompanying text is in French, then either a basic ability to read the language or a willingness to sit with the French/English dictionary is vital. Illustrations are excellent and make up over two thirds of the content, the text is vital as it provides much additional information.

Osprey Men-at-Arms series all 48pp, 8 colour plates, approx. 40 mono illustrations; p/bk, £6.99. **MAA 265 Flags of the American Civil War (3): State and Volunteer** by Philip Katcher, plates by Rick Scollins and Gerry

Embleton. This third title in the sequence is in many ways the most striking, since the nature of its subject is more colourful and varied than the 'government' patterns of unit flags and standards covered in MAAs 252 and 258. Mr Katcher's text is straightforward, clearly organised and informative, and backed by tabular matter. A good selection of monochrome photographs includes many surviving examples of sometimes elaborate flags carried by State troops. The colour plates — commenced by Richard Scollins, and completed seamlessly by Gerry Embleton after the former's tragically sudden death — offer 30 representative examples cleanly and attractively painted. Recommended.

Midas

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Firelock Forces

Introduction of the flintlock

By the middle of the 17th century, the flintlock was a potent presence on the battlefield. PHILIPP J.C. ELLIOT-WRIGHT compares it with the matchlock and describes its use in the English Civil War.

Many accounts of the introduction of the flintlock musket in the late seventeenth century as the replacement for the matchlock assume a technological explanation. That is, the flintlock was a technologically superior method of ignition so it inevitably came to replace the more primitive matchlock. This approach is fundamentally flawed when one looks at the comparative performance of the two systems. It took no longer to load and fire a matchlock as compared to a flintlock, the contemporary loading drills being almost identical. Both types of musket had identical ballistic performance, a 12-14 gauge lead musket ball being propelled by a 7 to 10 dram black powder charge along a four foot barrel was unaffected by the manner in which the charge was ignited. In fact, a matchlock was a far more robust weapon than a flintlock, even if the lock mechanism was damaged, it could still be fired by applying the match by hand, while the flintlock had no comparative fall-back option. Further, the simpler matchlock muskets were cheaper to purchase and easier to maintain. Essentially, the eighteenth century redcoat could just have easily produced the rolling volleys of the platoon fire with a matchlock as with the Brown Bess flintlock. So why, by the 1690's, had the matchlock come to be almost completely superseded by the flintlock?

To understand the change-over one must look back to the middle of the seventeenth century and focus on the original operational factors that underpinned the initial use of this method of ignition.

The contemporary term 'firelock' referred to a musket whose method of ignition was by a flint striking a steel plate and thus igniting the powder in a pan, which in turn ignited the main charge in the breech. This form of ignition appears to have been first developed in Holland (although it may also have originated in either Sweden or Germany) in the mid-sixteenth century. This first version was termed a 'Snaphance' mechanism which was developed from the wheelock and had a marked similarity in its complex design. There are references to the English forces in

Ireland in 1580 being armed with some and it will be seen later that warfare in Ireland was particularly suited to the introduction of the firelock. By the 1630s the Snaphance mechanism had become obsolete, although some were unquestionably used in the English Civil War, and it had been superseded by three other types of mechanism which were recognizable 'flintlocks', that is, the 'English Lock', the 'Dog Lock', and the 'French Lock'. All three types of mechanism had an 'L' shaped steel or hammer which sat on top of a frizzen or flash pan, the powder in this being ignited by the flint, held in the jaws of the cock, striking the steel. The three types of lock varied in the detail of the internal mechanism, the English and Dog locks both having external safety catches for the cock, while the French lock had an internal tumbler with two notches in it, the first being the 'half-cock' or safety position. It was the French lock mechanism which was, later in the century, to be all but universally adopted as the standard 'flintlock' design.

During the English Civil War, although few of the old Snaphances were still in use, the term 'Snaphance' was commonly applied by most contemporaries to all types of flintlock ignited mechanisms. The term 'Firelock' was at first used to describe the specific military units which would usually be described as being armed with 'Snaphances'.

The reasons for the development of this alternative to the matchlock mechanism are not as obvious as some historians suggest. The standard logic put forward is that the firelock mechanism was more resistant to damp weather and therefore more reliable. While this is to an extent true, the additional expense of the more complex lock and inevitable ease with which it could be damaged would seem to offset this. It must be borne in mind that the matchlock's advantage over a firelock was its very simplicity of ignition, even if the matchlock mechanism was broken, provided the barrel was sound and the match burning, it could still be fired by simply applying the match by hand. The fact that it remained the standard military musket until almost the end of the seventeenth century demonstrates it was not without its inherent strengths. The more compelling logic of the firelock's advantages was in the areas of safety, the expense of match-cord and their operational uses. Throughout the history of the matchlock the

incidents of musketeers either blowing themselves up by igniting their charges with the match or a more impressive explosion with powder barrels were legion. In addition, a matchlock needed match-cord in considerable quantities and this was expensive, for example, the 1,500 strong Lyme garrison used five hundred-weight of match every twenty-four hours.¹ The firelock, by the very nature of its mechanism, avoided these two factors which were intrinsic to the matchlock. The second factor, the cost of match-cord, meant that the more costly firelock mechanism soon paid for itself in the savings on the cost of match. Finally, the firelock was always ready for immediate action whilst a matchlock needed to be lit, a not inconsiderable process in an era before the cigarette lighter and an inherent advantage in a number of important operational roles.

The use most often quoted for the first companies of firelocks was as the guard to the artillery train. The military writer Richard Elton certainly reflects this in his comment about the artillery: 'Those which are ordained for their guard to be firelocks or

Opposite

Richard Hook's painting shows soldiers of Prince Rupert's Lifeguard of Firelocks (standing) and Prince Rupert's Regiment of Foot preparing for the storming of Leicester early on the evening of 30th May 1645.

By this stage in the war any early deficiencies in the supply and quality of the equipment in the King's army had long since passed. Apart from the pair's fundamental difference in firearm, both are essentially similarly clothed and equipped. Each wears their respective regiments' issued coats and breeches. The coats are un-waisted with cloth covered buttons, although tin buttons were also common and the blue coated soldier wears his captain's ribbons on the left breast of his coat. The breeches are open at the knee as was becoming generally the fashion by 1645. Both have the standard bandolier of charges with a waistbelt and 'tuck' (a simple rapier type sword). To prepare their respective weapons the firelock has only to set his flint while the soldier kneeling had to take off his knapsack to remove the steel and flint with which to laboriously light his match. Even when lit, any delay in the assault will burn-up vast quantities of match and when the assault comes the match will perfectly reveal the soldiers' presence. In the background, pikemen of Prince Rupert's Regiment of Foot have exchanged their cumbersome eighteen foot pikes for six to seven foot half-pikes appropriate for storming the town.



to have snaphances for the avoiding of the danger that might happen by the coal of the match.²

Yet this was far away from their only operational use in the mid-seventeenth century and far more companies of firelocks existed than would have been simply required for guarding the artillery train. Certainly they were favoured in Ireland even before the outbreak of the English Civil War. A number of officers who had served there stressed the firelock's value over the matchlock in Restoration military narratives; the Earl of Orrery in *A Treatise of the Art of War* (1677), also George Monck in his *Military Observations* written in 1644 (published 1671) and Sir James Turner in his *Pallas Armata* written 1671 (published in 1683). Essentially, the firelock offered the opportunity for musketeers to approach an enemy unseen denied to the matchlock, and the nature of warfare in Ireland, with its many ambushes, sieges and other small actions all favoured the increasing deployment of firelocks. The usefulness of the firelock in Ireland can be judged by the planned organisation of the regiments due to be sent to Ireland in early 1642 where every fifth company of foot was due to be armed with them. The senior English regiment in Ireland, The Lord Lieutenants Regiment, had four hundred firelocks on its strength alongside its normal fifteen hundred men armed with matchlock and pike.³ These four hundred firelocks had certainly arrived by late March 1642 and may have been in addition to the two independent companies under Captains Thomas Sandford and Francis Langley already listed as serving in Ireland.

In England, during the Civil War, some of the companies of firelocks that fought on the royalist side were from the army in Ireland, landing in November 1643 after the Cessation agreed between Ormonde and the Irish. Sandford's and Langley's companies of firelocks being examples of these who joined Byron's forces in Cheshire. There were though earlier companies of firelocks which were specifically raised for the King's and Parliament's armies in England. For the King there was William Legge's Firelocks who do appear to have been originally raised for the traditional role of guarding the artillery train and were then attached to the King's Lifeguard of Foot. On Parliament's side Essex had 100 firelocks under Lieutenant-General de Boyes to guard the train in October 1642 while General James Wemyss (a former Master Gunner of England) raised 2 companies of blue-coated firelocks to guard Waller's artillery train in October 1643.⁴ Prince Rupert, from late 1643, had his own red-coated Lifeguard armed with Firelocks as did his brother, Prince Maurice. Later in the war, a number of other firelock units were operating in the Welsh marches and Seven Valley, Chirke's Firelocks, also known as Sir

John Watt's Foot, being an example. It also appears that a number of standard infantry regiments were issued with a proportion of firelocks, Colonel James Proger's Foot had some in September 1644 at an action at Monmouth and the Royalist Ordnance Papers record that on 13th February 1645 there were issued: 'Three score Snaphance unto Sir Henry Bard...'⁵

Parliament's army also had additional companies of firelocks. Three companies of the Lord General's Regiment and Sir Edward Payton's company of Lord Peterborough's Regiment were all specifically armed with them in 1642.⁶ In November 1643 Colonel Edward Harley's regiment is recorded as receiving 800 muskets of which 150 were firelocks.⁷

The use of firelocks in England does not appear to have been markedly different from that in Ireland. A writer with far greater experience than Orrery, Sir James Turner, who had served on the Continent, in Ireland, Scotland and England, wrote in his work *Pallas Armata* about the advantages for firelocks in particular circumstances and appears to reflect the contemporary opinion that firelocks were valuable for special service beyond just guarding the artillery train.

'It is impossible to hide burning Matches so well in the night-time especially if there be any wind, (though there be covers made of white Iron, like extinguishers* purposely for that end) but that some will be seen by a vigilant enemy, and thereby many secret enterprises are lost... the sight whereof hath ruin'd many good designs.'⁸

The 'secret enterprises' in England usually involved assaults on fortifications. For example, on 13th December 1643 Captain Thomas Sandford led eight of his firelocks in scaling the steep rocks which fell precipitously away from one side of Beeston Castle and were believed to have been impregnable. Amazingly, once Sandford and his eight men had broken into the castle's upper ward, the garrison commander, Captain Steel, meekly surrendered the fortress along with his full compliment of sixty men. Steel was later tried for treason by Parliament for this craven act and shot.⁹ Next, Sandford and his firelocks lay before Nantwich where he gained a reputation for using blood curdling language to try and persuade the garrison to surrender, for example:

'I presume you very well know, or have heard of my condition and disposition, and that I neither give nor take quarter. I am now with my firelocks (who never yet neglected opportunity to correct rebels) ready to use you as I have done the Irish... if you put me to the least trouble or loss of blood to force you, expect no quarter for Man, Woman or Child'.

and

'Sirrah, behold the messenger of death, Sandford and his firelocks, who neither use to

give, nor take quarter'.¹⁰

At dawn on the 17th January 1644, Sandford and his firelocks led one of four assaults on Nantwich which were meant to surprise the garrison and capture the town. The raiding parties, equipped with scaling ladders, struck simultaneously at five different points along the walls while the cannon directed their fire on the town. Despite careful planning, the assaults failed and Sandford himself was killed. Sandford's orders for the assault were found in his pocket when the defenders stripped his body and they provided an excellent example of the contemporary use of firelocks:

'Major Harwar with the regiment under his command and the Fire-locks, with the scaling ladders, that and all the Dragoons, armed with Fire-locks or snaphances to fall on first so neer unto the fall of the river, on this (Acton) side of the water as may be; on the left hand of the bulwarks; then to be seconded with a hundred musketers; then a body of pikes; then a reserve of musketers; and let the soldiers carry as many faggots as they can; this to be at five o'clock in the morning, upon discharge of a piece of ordnance, and to fall on the wall, at discharge of some piece of ordnance: January 17, 1643/4,

Word. God and a good Cause'

The order was signed by Colonel Richard Gibson.¹¹

Another royalist unit of firelocks which led a number of assaults on fortifications was Prince Rupert's Lifeguard of Firelocks. In January 1645 they led an abortive assault on the defences of Abingdon while on 30th May 1645 they led the successful assault on the walls of Leicester. Here their commander, Major Bunnington, was recorded as being shot in the eye just as he was at the top of a ladder leading the assault.¹² Their firelocks also made them ideal as garrison troops which was demonstrated when they were recorded as being with Rupert when he marched out after surrendering Bristol on 11th September 1645: 'his Life Guard of firelocks came forth, all in red coats before him...'¹³

By the end of the Civil War it would seem that the proportion of firelocks in every regiment of foot was increasing. The Ordnance Papers record for the equipping of the New Model Army between 1645 show over 3,300 firelock muskets being delivered, far in excess of the number needed by the 200 Artillery Train Guards of Major Desborough or the 1,000 odd men of Colonel Okey's Dragoons.¹⁴ It would appear that the twelve infantry regiments were issued with a number of firelocks with a proportion going to each company. This is illustrated by a return of May 1650 when Colonel Walton's company was re-equipped and was issued with 66 matchlocks and 6 firelocks, these almost certainly being for sentry duty to both save on match and avoid tell-tale light.¹⁵

This trend continued in the later campaigns, post 1646, in Ireland, Scotland and Flanders. In 1647 for example it was recorded that 'two companies of firelock-men non-regimented' arrived at Dublin.¹⁶ Lastly, at the Battle of the Dunes in 1658, General Lockhart's account highlights the crucial role of a forlorn hope of 400 firelocks whose fire broke-up several heavy Spanish assaults.¹⁷

That this trend was not limited to the English army is demonstrated by the later Scots' armies. At Preston, in 1648, Sir Alexander Fraser of Philorth's Aberdeenshire regiment was fully equipped with firelocks.¹⁸ At the Battle of Dunbar, in 1650, Cromwell's dawn assault caught most of the Scottish infantry with their match unlit and only two Scottish regiments were able to return fire, Campbell of Lawers and Sir John Haldane of Gleneggies, both of which were fully equipped with firelocks.¹⁹

While there are no surviving details on the specific organisation and equipment for Royalist companies of firelocks there are for those of Parliament's forces that were assigned to guard the Artillery Train. In 1642, Essex's army had the company of firelocks under de Boyes as part of the Artillery Train. As their captain was the Lieutenant-General of Artillery, actual command would have devolved on the company's senior Lieutenant, Richard Price. The rest of the company consisted of an Ensign, 2 sergeants, 3 corporals, 2 drummers and 66 men, the company being short of its regulation strength of 100 men. On the 10th of October 1642 they were issued standard uniform coats and were otherwise equipped as a normal company of foot with an ensign, halberts, 2 drums, 100 firelocks and 100 swords.²⁰ When the New Model Army was raised in early 1645 it included two companies of firelocks under the command of Major John Desborough attached to the Artillery Train as its guards. They proved to be a valuable asset at Naseby where they famously held off Prince Rupert's horse from looting the baggage and Train drawn up in the rear of the army, and they are clearly represented in the famous drawing of Naseby in Joshua Sprigge's 'Anglia Rediviva' in the bottom left hand corner. Their organisation and equipment was almost identical to that of de Boyes' earlier company. Each of the two companies consisted of 1

captain, 1 lieutenant, 1 ensign, 2 sergeants, 3 corporals and 100 firelocks (there is no mention of drummers).²¹ The men were issued with 'Tawny' coloured coats rather than red ones.²²

Although it was to take another 40 years to finally replace the matchlock, the period 1640-1660 saw the firelock firmly established in the English military due to its specific technological advantages in certain military operations. Initially, with the Restoration army, Monck, the majority of whose service had been in Ireland and Scotland, did indeed equip his regiment, the Coldstream Guard, entirely with firelocks in 1660.²³ Although these were later replaced in 1664 with cheaper matchlocks, 1667 saw the progressive re-introduction of the firelock to the new grenadiers and from then on the proportion of firelocks to matchlocks increased until their universal issue by 1703●

Note:

²⁰Extinguishers. On many occasions the lighted match of matchlock muskets had given warning of surprise attacks to garrisons and the like. In an attempt to solve this inherent problem with match, The Prince of Orange had invented a tin pipe about a foot long to contain the match and hide its light: it had holes in the side like a flute to let in the air and prevent the match from being extinguished.²⁴ While this worked, it was cumbersome to say the least.

References:

- 1) p.83, Cromwell's Army. C.H. Firth (1902).
- 2) p.145, The Compleat Body of the Art Military. Richard Elton (1650).
- 3) p.7, An English Army for Ireland. Ian Ryder (1987).
- 4) p.88, Cromwell's Army. C.H. Firth (1902); p.25, Cheriton 1644. John Adair (1973).
- 5) p.356, Vol.11, The Royalist Ordnance Papers. Dr. Ian Roy (1978).
- 6) p.45, Old Robin's Foot. Stuart Peachey &

Alan Turton (1987).

7) p.26, Issue 40, English Civil War Notes & Queries.

8) p.176, Pallas Armata. Sir James Turner (written 1670, published 1683).

9) pp.91-92, Memorials of the Civil War in Cheshire and the Adjacent Counties. Thomas Malbon of Nantwich, Gent. Edited by James Hall (1889).

10) p.62, The Campaign of the Irish Royalist Army in Cheshire, November 1643-January 1644. John Lowe, in Vol.III, Transactions of the Historic Society of Lancashire and Cheshire, (1959).

11) pp.105-106, Memorials of the Civil War in Cheshire. Thomas Malbon.

12) p.52, The Complete Military Diary, Richard Symonds. Edited by Stuart Peachey (1989).

13) p.181, Vol.III, Memorials of Prince Rupert and the Cavaliers. Edward Warburton (1849).

14) pp.53-115, Contracts for the Supply of Equipment to the 'New Model' Army in 1645. Gerald I. Mungam, in Journal of the Arms and Armour Society, Vol.VI, number 3, September 1968.

15) p.32, Issue 23, English Civil War Notes & Queries.

16) p.431, Vol.VII, History of the British Standing Army. Colonel Clifford Walton (1894).

17) p.196, Vol.II, The Last Years of the Protectorate. C.H. Firth (1909).

18) p.43, Issue 43, English Civil War Notes & Queries.

19) p.45, The Battle of Dunbar. C.H. Firth. in Vol.XIV, Transactions of the Royal Historical Society.

20) p.22, Old Robin's Foot. Stuart Peachey & Alan Turton (1987).

21) p.253, Naseby. Peter Young (1985).

22) Perfect Passages, May 1645.

23) p.331-332, Vol. V and p.431, Vol.VII, History of the British Standing Army. Clifford Walton (1894).

24) p.84, Cromwell's Army. C.H. Firth (1902).

This detail of Major John Desborough's Firelocks guarding the artillery and baggage train of the New Model Army at Naseby is taken from Joshua Sprigge's 'Anglia Rediviva'. While it is the only contemporary representation of firelocks, it unfortunately offers us little hard information as in reality the baggage train extended over at least one square mile being made up of thousands of waggons. Further, the artistic style of the picture is based on the European style of engraving in the German *Theatrum Europaeum* and all figures are therefore more representative of German soldiers than English. (K.A.B. Roberts Collection.)



The Gathering

August is the busiest month for re-enactment in Britain. PHILIPP J.C. ELLIOT-WRIGHT lists some of the major events.

If there is a single weekend in the year when almost every single re-enactment group in Great Britain stages or participates in an event, it is the extended weekend of August Bank Holiday. From Iron Age Britons and Romans through the English Civil War to the American Civil War, across the country the public is spoilt for choice.

The following is a selection of events taking place over this forthcoming August Bank Holiday, Sunday and Monday 28-29th (not Saturday unless specifically indicated).

Celts and Romans from Brigantia and Legio 11 Augusta will be at Corbridge Roman Town, Northumberland. Enquiries 0434-632349.

Saxon Warriors will be taking on the Vikings hordes at Old Sarum Castle,

Wiltshire. Enquiries 0722-335398.

Displays of Medieval combat by the Escafeld Medieval Society will be taking place at Battle Abbey, East Sussex (including Saturday). Enquiries 0424-773792.

A Medieval siege will be staged by the Wars of the Roses Federation at Warkworth Castle, Northumberland. Enquiries 0665-711423.

A Medieval tournament will be staged by the Plantagenet Society at Farleigh Hungerford Castle, Somerset. Enquiries 0225-754026.

The court and troops of Henry VIII will be re-created at Dover Castle, Kent. Enquiries 0304-201628.

The siege and storming of Helmsley Castle, North Yorkshire, will be re-created by the English Civil War Society (including Saturday). Enquiries 0439-70442.

The Sealed Knot will be staging the 'Battle of Windrush Valley' at Witney, Oxfordshire. Enquiries 0602-815540.

Daily life during the English Civil War will be enacted by soldiers and civilians of the Siege Group at Sulgrave Manor,

Northamptonshire. Enquiries 081-427-1519.

The redcoats of the American War of Independence will be re-created by The Association of Crown Forces at Goodrich Castle, Hereford and Worcester. Enquiries 0600-890538.

The Napoleonic Association will be staging a battle display at Northolt, Middlesex. Enquiries 0483-574455.

There will be a Regency Fair with a display by the 12th Prince of Wales Light Dragoons at Porchester Castle, Hampshire. Enquiries 0705-378291.

The Confederation of Independent American Civil War Re-Enactors will be staging a battle display from the American Civil War at Ledbury, Hereford and Worcester (only on the Monday, 29th August). Enquiries 0604-758123 •

A square of the 68th Foot under attack by Vistula Lancers, represented by members of the 68th Durham Light Infantry Display Team and The Troop.



Battle at the Bridge

Arnhem Book Feature

'I am very bitter about Arnhem; I lost too many friends,' recalls an officer preferring to remain anonymous. 'I came to the conclusion that it was all due to the flag-waving attitude of people like Montgomery who wanted to show how much cleverer they were than the others.' In an extract from *Arnhem 1944: The Airborne Battle*, published next month by Viking (£18.00), MARTIN MIDDLEBROOK records the fighting on the third day at the bridge.

The reports of action at the Arnhem bridge steadily become less accurate. The exact sequence of events cannot be guaranteed, though all the incidents described here did happen on this day and, combined, they form a true reflection of what was to be the final hours of resistance. The main feature was the relentless shelling, by both the German artillery and roving tanks, and the mortaring. The Germans realized that it was quicker to destroy these stout Dutch buildings by fire than by blowing them slowly to pieces and were using more phosphorus shells to cause fires. Among the early victims of the shelling were members of the Brigade Defence Platoon, which in Sicily had captured and held a bridge until relieved. When the first tank engines were heard on this morning, some optimist shouted, 'Thirty Corps is here', but they were two German tanks. The first shell hit the corner of their house, and they soon had to leave with at least one man killed and their commander, Lieutenant Pat Barnett, wounded. One man blown out of his position, but not seriously hurt, was the American, Lieutenant Harvey Todd, who claimed that he had killed sixteen Germans by now with his Springfield automatic carbine, which was much envied by British officers.

Another building to be hit was that occupied by the RASC platoon which had been protected until now by the prison wall. The defenders stood ready to repel an infantry attack through the gap in the wall but were instead struck by shell fire. Driver Jim Wild describes this:

'The first shot hit the corner of the roof. It didn't explode there because the only resistance it had was the slates on the roof, but it left a hole nearly two yards across. The



German SS soldiers close-in on the 2nd Staffords near Arnhem Bridge.

lads underneath it were showered with debris; I wouldn't like to repeat what they said. The shell exploded against the brickwork at the other end of the long room. We were all down on the floor. A lot of shrapnel was flying about, and I think one man was killed and one wounded. We decided to get out, down on the ground floor, when the second shell exploded against the front wall of the room we had been in; we would all have been killed if we had still been there.'

Private Don Smith tells how a house occupied by part of B Company may have attracted German attention:

'RSM Gerry Strachan came into the room, then went upstairs where, I understand, he opened fire with a sub-machine-gun. All hell broke loose, and he ordered us out quickly. I was a little slow moving but was assisted out of the window by an explosion. I seemed to float through the air and hit a wall; the wind was knocked out of me. I was wet about the seat of my trousers, and Ron Moon asked if I was all right. I was. Ron picked up the Bren gun, ran into the downstairs room and was killed there by a tracer through his head.'

It is believed that two anti-tank guns still remained in action, but German infantry

were now in positions from where they could fire directly on anyone who attempted to man a gun. The 2nd Battalion's 3-inch mortars were the only weapons capable of hitting back at the German artillery. They had successfully engaged some of the guns firing from the south bank of the river in recent days, but the Mortar Platoon officer, Lieutenant Reg Woods, and his sergeant, Maurice Kalikoff, were both fatally wounded on this day.

The Germans occasionally made a mistake. Private Sidney Elliott of B Company tells what happened when a half-track came in from the west and halted outside his house near the riverside:

'We heard the rattle and clanking of a vehicle and, on looking out of the window, we saw a half-track with, I think, four Germans aboard. We were by now extremely short of ammo, but we had one Gammon bomb left. This was immediately primed; one of us tossed it, and it landed in the half-track. I can still see one of the bodies as it seemed to rise into the air and disappear into the river.'

Sensing that resistance was starting to fail, the Germans now launched a series of infantry attacks with close tank support from the east, trying to reach the area underneath the ramp. The last defence in front of this

area had been the group of houses defended by Captain Briggs and a mixed group of Brigade HQ personnel, signallers and six RAOC men. But shelling had forced the evacuation of these men to a position under the ramp where they barricaded themselves in with some timbers. Private Kevin Heaney, one of the RAOC men, says:

'The atmosphere and tension grew unbearable. We were expecting to be attacked but uncertain from which direction this was going to come. The mood varied between hope and despair, and the lack of news from the rest of the division or of progress by Thirty Corps was bad for morale. A young officer, a studious looking chap, gave us a pep talk, trying to be a morale booster, saying how well our brigade had done in North Africa and how our performance at Arnhem would go down in history. But I had not been in North Africa, and the thought went through my mind, about fighting to the end, 'not if I can help it', particularly as there was talk of leaving the wounded behind.'

The German intention seemed to be to prepare the archway over the road nearest to the river for demolition. The Guards Armoured Division had reached Nijmegen that morning, and the Germans presumably wanted to be able to destroy that small archway, easily bridgeable later, rather than the main bridge span, to prevent British tanks crossing the river if they should reach Arnhem. There developed a series of vicious attacks and counter-attacks by infantry and engineers from both sides in which the Germans placed explosive charges against the pillars supporting the archway and Royal Engineers led by Lieutenant Donald Hindley attempted to stop the demolition preparations. Hindley's party, accompanied by Lieutenant Grayburn and some of his A Company men, dashed out and removed the fuses from the charges around the piers supporting the arch — 'a nerve-racking experience', says Hindley, 'working a few feet away from a large quantity of explosives which could be fired at any moment'. Grayburn was wounded again but returned after being treated, one arm in a sling and with bandaged head. Hindley says:

'It was obvious that the enemy would quickly restore the fuses, and a second, heavier attack was made to try to remove the charges themselves. However, the enemy had by now moved up a tank to cover the work. We were quickly mown down. Lieutenant Grayburn was killed — riddled with machine-gun fire. I escaped with flesh wounds in my shoulder and face.'

Lieutenant Jack Grayburn was awarded a posthumous Victoria Cross, the only VC at the Arnhem bridge.

The events just described took place over several hours, all through the morning and well into the afternoon. Meanwhile, at about 1.30 p.m., Lieutenant-Colonel Frost was

wounded. Signalman Bill Jukes saw Frost with Major Crawley 'crouched on the top of a pile of rubble, Frost pointing in the direction of the bridge like a figure in the painting of some last stand'. There was the explosion of a mortar bomb, and both officers were wounded in the legs. Frost's wounds were serious enough to put him out of action, and they necessitated another change of command. Major Hibbert appointed Major Gough of the Reconnaissance Squadron 'to command the brigade'. Frost was consulted about the change and approved it:

'Freddie was spare. I had spent a lot of time with him. We had gone for little walks when it was quieter, so he was my confidant, you might say. I was taken into the aid post. I was quite affected by the blast as well as being wounded and I really wasn't able to control things. Freddie came along, and I told him to carry on — not that there were any orders much to give by then. That was the very worst time, the most miserable time of my life. It is a pretty desperate thing to see your battalion gradually carved to bits around you. We were always hoping, right to the bitter end, that the ground forces would arrive. As long as we were still in place around the bridge, preventing the Germans bringing up anti-tank guns to engage the XXX Corps tanks, we were doing our job. But it was only isolated groups by then, with no proper control over the area.'

At about the time that John Frost was wounded, the bridge force lost one of its most important positions. In the substantial Van Limburg Starum School building, halfway along the eastern side of the ramp embankment running down to the town, the combined force of Royal Engineers and 3rd Battalion men who had held this exposed position throughout the battle, with no heavier weapon than a Bren gun, were about to be overwhelmed. About thirty men remained unwounded, but ammunition was low, and there was no food or water. Either a German tank standing on the ramp only seventy yards away or a German gun further away started systematically blowing away the roof and top storey of the building, where most of the defenders were positioned. One shell set the roof ablaze; another burst where two of the 3rd Battalion officers, Major Lewis and Lieutenant Wright, were taking their turns to rest, injuring both officers and so stunning Len Wright that he has no

memory of the next few hours. What did happen next became an emotive subject among the defenders. Several of them have provided contributions; the account which follows is a consolidation of these.

There were no means of putting out the fire, and it was obvious that the building had to be evacuated. Captain Mackay appointed a party of sappers to remain at their positions to prevent any German attack over the surrounding ground while the evacuation took place. The wounded were brought up from the basement, the eight seriously hurt being carried on doors or mattresses. After they left the building, they had to be lifted over a low wall which was exposed to German fire. One unconscious Royal Engineer clutching a photograph of his wife and children was hit again by machine-gun fire as he was being lifted over the wall, and one of the 3rd Battalion men was hit in the face and killed by a mortar bomb burst; a third man was hit in the head and killed as he



A low-flying Spitfire photographs the ramp of the Arnhem road bridge littered with vehicles of the 9th SS Panzer Division's reconnaissance unit destroyed in the Monday-morning attack. The angle of the shadows indicates that the photograph was taken that afternoon. Not one of the defenders is to be seen in the open; they are all in buildings which, as yet, show no signs of battle, or in weapon pits. The large building, part of which can be seen in the bottom left-hand corner, is Brigade HQ.

climbed over the wall. Meanwhile, the shelling of the upper part of the building had continued, and one of the rearguard positions was hit, with two men being killed and one badly crushed. One of the dead was Corporal William Simpson, who sported a large moustache which grew up the sides of his face to join his hair. Known as 'Canadian Joe' because he had once lived in Canada, Simpson had been one of the stalwarts of the defence.

Captain Mackay returned to the building to fetch out the remainder of the rearguard. The intention now was for the whole party to move to a nearby building, the one evacuated by the Royal Engineers on the Sunday night. The other RE officer present, Lieutenant Dennis Simpson, started this move but was immediately wounded. More men were being hit outside the school, and Major Lewis called out from his mattress: 'Time to put up the white flag.' His second in command, Captain 'Chippy' Robinson, says: 'Being

unwounded, I felt guilty about allowing myself to be captured, so I went up towards where he was and called out to ask if the fit men could attempt to get out. He shouted back that we could.' This news was passed to the REs, the phrase 'Every man for himself' perhaps being used. About ten men, including Captains Robinson and Mackay, then dashed across the road into the gardens of some houses to the east, only to be discovered later and taken prisoner, although Mackay eventually escaped and reached England.

But some of the REs, particularly the senior NCOs, did not like abandoning the wounded. One of them says:

'Some of us felt that was the time an officer should have stayed with his men, and I was one of those who stayed with the wounded. It had reached the stage where each individual had to decide whether to stay with his wounded comrades or clear off. I suppose it can be said that Captain Mackay, in getting away to England as he did, took

back vital information and that we were facing certain capture. But the majority stayed with the wounded.'

Major Lewis now addressed those who had stayed, complimenting them on their fine defence of the school but telling them that they must surrender. A sapper was sent to the top of the embankment with a white towel tied to his rifle but was immediately struck in both legs by a burst of machine-gun fire. The Germans closed in, and the firing ceased. Accounts say that the German who fired that last burst was shot by one of his own officers for firing on the white flag. As the wounded were being checked, this German officer inspected the sapper who was so badly wounded and unconscious, declared that there was no hope, and shot him in the head with a pistol. The man's comrades were appalled by this but later agreed that it was an act of mercy. So ended the gallant defence of the Van Limburg Stirum School.

Returning to the southern part of the perimeter, a considerable body of men had gathered among the pillars under the ramp archway nearest the river. They were the survivors of the parties forced out of their houses east of the ramp and of A Company who had been burned out of the houses close by this place of dubious shelter. A decision had been made to concentrate all of the still effective members of the British force in the large gardens at the rear of Brigade HQ. The ever-present Major Tatham-Warter came across this group and ordered them to make an attempt to go through the ruins and move to that position. Two men have provided accounts of that hazardous move, only of 180 yards, but across fire-swept ground. Signalman George Lawson says:

'I heard the shout, "Every man for himself." A group of us made a dash for it. We had to go through a mortar barrage first; that's where young Waterston got hit. He was leaning against this wall. I thought I should go back for him, but he was turning blue, and I carried on. Several of the others were hit, too; I was hit in the face by shrapnel. I know I slung my rifle away because the bloody thing was useless; it wasn't working properly. I took the bolt out and threw it away. A group of us then tried to cross the open road, but four or five were mown down by machine-gun fire. I turned back and took refuge in one of the burnt-out buildings — how long for, I don't know, but I was forced to get up because my gas cape and my smock was burning from the hot stone; my arse was almost on fire.'

Lawson managed to reach the comparative safety of the Brigade HQ building. Private Kevin Heaney of the RAOC also heard 'Every man for himself':

'I reached the corner of a garden and had to negotiate a wall. I saw several chaps being picked off as they went over. I remember one hit in the forehead and one in the chest, hearing the cry for "Mother" in their dying



breaths. A hand grenade came over the wall and exploded; the chap behind me had a great big hole in the neck, and blood was gurgling out. I put my field dressing round his neck.

'I managed to make my way into the rubble of the houses nearby; six of us gathered in the remains of a hallway. The Germans were fifty yards away with a Schmeisser. Now comes the unheroic part. I said to the other chaps, including the man with the wounded neck, "How about packing it in?" I didn't know any of them. One chap said, "I'm easy"; I don't think he was ready to surrender, though. I put my hand inside my jacket, tore off my vest, gave it to the man nearest the opening, and he waved what was, in effect, the white flag. The Germans shouted to us to come out with our hands up. But the first four out were all hit by machine-gun fire. I heard the first one to go down say, "Bastards." I assumed that the Germans who fired were themselves under fire from our men. That was my charitable interpretation as to why they fired, because they were very chivalrous generally.

'Myself and one of the wounded men got back into the house and sat in the rubble. We could hear mortar fire on the nearby houses, walls falling, heard our own men trapped, calling for help. We were there about two hours. I had my prayer book open and was saying the Prayers for the Dying. Later on, the Germans came in, rescuing the trapped men and taking them prisoner, and this great big German came and took the two of us also.'

Described as being prominent in this action was Lieutenant Grayburn; the second 'demolition charge' sortie in which he was killed must have been after this time.

The defence was now concentrated into

an area only about one-fifth the size of that first held. Most of the active men were in the garden area chosen for the final assembly, in slit trenches sited to allow fire to be aimed at the bridge and the ramp through gaps between houses. There were some bizarre incidents. Private Henry Sullivan of A Company was digging a trench in the garden when he came upon two bottles of wine and a store of 2½ guilder coins which a Dutchman had buried. He drank the wine — 'It wasn't very good but it was better than nothing' — but only managed to keep one of the coins as a souvenir. Private 'Ossie' Fahey was still in the Brigade HQ building. He had earlier found two superb shotguns from a stock the Germans had obviously confiscated from their Dutch owners: 'I had taken them as loot; I had thoughts of taking them back and shooting rabbits in Belton Park.' When he ran out of Sten-gun ammunition he started using one of the shotguns, 'trying to keep the buggers away. I might have hit one or two — I wasn't a bad shot.'

Not so funny was when the Germans brought up a tank and started setting fire to all of the remaining buildings. Gunner Dennis Bowles, one of the signallers in the artillery observation post at Brigade HQ was at the receiving end of its fire.

'There was a big bang and a lot of dust, and that put the wireless out of action. Back at the battery they heard the set go dead in the middle of my transmission and when they returned to England they reported that I was "missing presumed killed". The New Park Inn at Boston heard about it and put my photograph up on the bar mirror with the others who had died. They had to take it down when I came back in 1945.'

German tanks and troop convoys were finally able to start using the bridge late that

afternoon. Ironically, this was almost the same time that the Nijmegen road bridge was finally captured, helped by a hazardous and costly river assault by Colonel Reuben H. Tucker's 504th Parachute Infantry Regiment — a feat of arms but one which would have been unnecessary if more urgency about the Nijmegen bridge had been inserted into the 82nd US Airborne Division's plan for the Nijmegen area. It was 6.30 p.m. before the first Sherman tanks of Sergeant Peter Robinson's troop from the 2nd Grenadier Guards rolled across the bridge, an equally brave act because the Germans could have blown the bridge and sent them all to their deaths in the river below. But that short stretch of narrow roadway to the British airborne men clinging to their positions near the Arnhem bridge was now strongly defended, and the Grenadiers made little further progress. The tanks needed to replenish ammunition and fuel after earlier hard fighting in Nijmegen, and the infantry battalion with which this unit regularly worked was still tied up fighting in Arnhem. It has been suggested that a mixed force of available armour and infantry could have been thrown together and launched up that road. The men waiting at the Arnhem bridge had been promised a definite attack at 5.0 p.m. The Americans who had carried out the costly assault across the river Waal were disgusted at the delay ●

Exhausted and wounded men — mixed 3rd Battalion and Royal Engineers — are taken away by the Germans after the fall of the school building near the Arnhem bridge on Wednesday. The man with the bare arm is Lt Len Wright of the 3rd Battalion.



Culloden Feature Film

Behind the scenes

Encouraged by the success of its Culloden documentary, Cromwell Productions has gone on to produce a feature film about the rebellion called *Chasing the Deer*, released next month. STUART REID recalls the experience of making it.

In 1993 Cromwell Productions added *Culloden Moor* to their steadily expanding 'Campaigns in History' video series. Surprisingly enough, this was the first documentary to be made about the battle since the famous BBC film in the 1960s, and encouraged by its success Cromwell have gone on to produce a full length feature film about the last Jacobite rising: *Chasing the Deer*.

The Culloden documentary was very largely shot in the course of an extremely hectic weekend on Cannock Chase in Staffordshire — a location which looked reasonably convincing, but which at the same time was convenient enough for the many re-enactors forming the two armies. The British Army, wearing some rather moth-eaten red coats left over from Stanley Kubrick's Barry Lyndon, was substantially made up of Napoleonic re-enactors belonging to the 68th Durham Light Infantry Display Team (see MI No. 71) and the Napoleonic Association, although members of Revolutionary War groups also took part. The Jacobite Army on the other hand was largely assembled using English Civil War Society re-enactors, and the cavalry belonged to Alan Larsen's well-known 'Troop'; swapping red and blue coats to serve both as dragoons and as the Prince's lifeguard.

Having acted as military advisor and re-enactment co-ordinator on the Culloden documentary I was engaged to do the same job on *Chasing The Deer*. However, a four week shoot in the north of Scotland in March and a very tight budget ruled out any significant participation by re-enactors and by the time we were finished I'd also added Armourer and Sergeant Major of the Argyll Militia to my curriculum vitae.

The earlier documentary stressed the fact that Culloden was not, as is so often thought, just yet another battle between the Scots and the English, but rather it was the crushing of a rebellion opposed by many if not most Scots of the time. Reflecting this theme, much of the action in *Chasing The Deer* centres



Culloden Moor and Colonel Walton points out to his men that the highlanders on the other side of the bog are sinking into it just as deeply.

around a company of the Argyll Militia (commanded by Brian Blessed) and the plot generally emphasises the degree to which the conflict was actually a civil war.

As it was, the highland forces were largely represented by Seoras Wallace and his extremely professional Clan Wallace Trust, (not under any circumstances to be confused with a re-enactment group known simply as 'the Clan'), but the complete absence of Napoleonic re-enactors in particular meant that both the ordinary extras and those members of the ECWS hardy enough to brave the continual blizzards, gales and everything else which the weather threw at us (the Crimean veterans of *Sharpe* had it easy) needed to be trained from scratch as British, regulars and militiamen.

This, as it happened, turned out to be reasonably straightforward and a mixture of patient explanation and an outrageously over-acted paradeground manner (you don't earn three tapes in the British Army without learning a trick or two) served to get the basic instruction across, while the few re-enactors available provided both a disciplined core and more importantly the necessary experienced NCOs to fill out

the chain of command and make it all work.

A start was made at Hagley Hall near Birmingham, where the Prestonpans sequences were to be filmed and with a bare day to prepare, I put a platoon together, mainly from re-enactors, and exercised them according to a simplified version of good old Humphrey Bland's 'Treatise of Military Discipline' (1727). Uniforms were provided from stock by theatrical costumiers 'Flame' and firelocks by Bapty's. The latter actually turned out to be original late production India Pattern weapons. Generally speaking they were in poor condition after years of misuse, but although no interesting markings were observed on the firelocks themselves, a good half of the sadly battered bayonets accompanying them bore regimental or company marks from the Napoleonic period or even earlier! A large consignment of Enfields later used for equipping the rear ranks also turned out to be interesting, and although just as rusty many of them were evidently Volunteer weapons with chequered stocks and fancy engraving on the lock-plates and nose-bands.

A bit of rummaging about in the costume



Clan Wallace in action; Loyalist and Jacobite highlanders locked in combat.

department turned up a rather mixed selection of grenadier caps and next day, when the time came to knock the rest of the extras into shape, I turned the original platoon, now commanded by a re-enactor named Toby Hampson, into grenadiers, while the newer arrivals formed a large battalion company of 'Hatmen' (yes, it is the easiest way to refer to them) under Nigel Walton, another of the more experienced re-enactors. Perhaps not surprisingly the newly minted grenadiers took their elite status very seriously indeed, promptly adopted a superior attitude and started putting a bit of snap and precision into their drill.

The grenadier caps also served a double purpose in identifying those who could be trusted to engage safely in hand to hand combat with the Clan Wallace people, and it is perhaps worth pointing out that frighteningly exciting though some of the fight sequences appear, none were 'freestyle' combats. Instead, all were carefully choreographed by Seoras Wallace.

Having wrapped up Prestonpans and a number of interior shots at the Hall, the production then moved north to Fort George, Ardersier, where we were to be the guests of Historic Scotland, and more importantly the 1st Battalion, Royal Scots. The Royals, as they will proudly call themselves, served in the original campaign and as I wanted to

emphasise the part played by this famous Scots unit, those Royals volunteering to act as extras were agreeably surprised to find themselves for the most part playing members of their own regiment and marching under Les Prince's magnificent replicas of their old colours. Even after most of the real ones departed for an exercise on Belize halfway through filming, we kept the 'Royals' going throughout the shoot and they formed the core of the British battalion. This was ultimately taken over by Nigel Walton when he returned with other re-enactors for the climactic Culloden shoot. By that time we had run out of Royals' uniforms and formed a second battalion company dressed in what was left.

In the meantime of course most of the military activity had been centring around the red jacketed Argyll Militia, who are being recruited just as the film opens in August 1745. Given that the original unit was not embodied until December of that year and wore no uniforms save for red crosses in their bonnets, they might at first appear a little anachronistic. However both the earl of Loudon's 64th Highlanders and three additional companies of the 43rd (later 42nd) Highlanders were in fact in process of being raised when the rebellion broke out that summer. Purists might therefore choose to think of them as

actually representing the latter, especially since they are in the film kitted out in Black Watch uniforms. Calling them the Argyll Militia, however, fitted in better with the general tenor of the story.

Neither the Argylls, nor the three Black Watch companies were equipped with broadswords at the time, so those featured in the film were also armed only with firelocks and bayonets. However, just as the grenadiers took a very proper 18th century attitude to their noble calling, so the Argylls consciously or unconsciously echoed their own predecessors rather casual approach to discipline. Although they were soon quite capable of going through the motions on the word of command, they were altogether quite incapable of carrying themselves in anything like a smart and soldierlike manner.

All of this was shot against a magnificent backdrop of hills, forests, foul weather (including a nightmare march through a real blizzard) and above all Fort George itself, surely the finest 18th century fortification in Britain. Virtually untouched since its completion in the 1760s it provided ideal locations and being accorded the very real privilege of exercising an 18th century battalion (albeit a small one) on the fort's grand parade is going to be one of my fonder memories even if it was, sadly, off camera●

Irish Warlords

Irish warriors 1014-1346

In this exclusive publication of Angus McBride's paintings for the Carroll Institute, TIM NEWARK reveals the argument and research behind these reconstructions of the authentic appearance of medieval Irish warriors.

From 1014 onwards, Irish warriors have been portrayed as primitive, unarmoured tribesmen fighting with sticks and stones. Much of this misrepresentation has been due to a lack of accurate visual records of Irish warfare in this period. The commission of a series of paintings from Angus McBride by the Carroll Institute of Irish history, reconstructing the appearance of medieval Irish warriors, goes some way towards filling this gap.

The past paucity of visual material has meant dependence on not always reliable literary evidence, ranging from heroic Irish descriptions of warriors protected only by shirts of silk, to widely prejudiced accounts by contemporary chroniclers of the English

conquest: 'This people [the Irish] is truly barbarous, being not only barbarous in their dress, but suffering their hair and beards to grow enormously in an uncouth manner... indeed all their habits are barbarisms' [Giraldus Cambrensis, 12th century]. Such criticism of the apparent primitivism of Irish arms and armour ignores the fact that the wearing of Irish national military costume throughout the medieval period was as much a statement of resistance as any armed rising. Indeed, the suppression of Irish fashion was a campaign fought tenaciously by the English over their 800 years of conquest. In 1626, it was still understood that the Gaelic spirit resided as much in the appearance of its warriors as their action: 'It is to be observed in the proud condition of the Irish, that they disdain to sort themselves in fashion unto us, which in their opinion would more plainly manifest our conquest over them' [The Government of Ireland under Sir John Perrot]. The Carroll paintings are therefore not only a re-evaluation of the traditional representation of Irish warriors, but an

explanation of Gaelic defiance as embodied in their very clothes.

The battle of Clontarf in 1014 is the famous Irish victory over the Viking invaders, celebrated especially as most of England had already submitted to the Norse conquerors. In reality, it was more a struggle for power between two Irish factions disputing the High Kingship of all Ireland (with the Vikings playing opportunistic politics), rather than a concerted effort to rid the country of the Viking settlers, and yet the achievement was significant and rang loudly through the chronicles of the period. The combat between the Irish warlord Murchad, son of Brian Boru, and the Viking chieftain Sigurd, was considered the highpoint of the battle and is reconstructed in the first of the

Irish warlord Murchad duels with Viking chieftain Sigurd during the battle of Clontarf in 1014. Painting by Angus McBride, courtesy of the Carroll Institute.





Angus Mc Bride

Carroll paintings. It is a classic heroic duel typical of Celtic literature. Whether such a clash actually happened is of course impossible to tell, but there is a strong tradition in medieval warfare in which leadership depended on being seen at the centre of the action and a noble reputation could only be won by single combat with a warrior of similar high rank. On such occasions, noble warriors singled out their opponents and engaged in combat while more lowly warriors held back to watch the outcome. Murchad was just such an ambitious warrior and would no doubt have been keen to add to his reputation, while his father, Brian Boru, sat at the rear as commander-in-chief behind a shield wall of warriors.

Contemporary Irish chroniclers of the battle of Clontarf characterised the Vikings as cunning, professional warriors wearing coats of triple-layered mail, whereas Brian Boru's men are quick and bold and wear only handsome, multi-coloured shirts. Clearly, this is an heroic convention in which the wearing of armour is seen as something devious, while the sons of Brian Boru are all the braver and worthy for entering battle

unarmoured and yet still defeating their iron clad enemy. In truth, the noble warriors of Brian Boru's army would have had as much access to mail armour and the finest weapons as the Viking settlers from whom they probably bought or captured such equipment anyway. Murchad is therefore represented in Angus McBride's painting wearing a shirt of mail and wielding two swords similar to those found in archaeological sites around Dublin. That said, we are already seeing in the Irish view of themselves a preference for ancient heroic garb over the latest and most effective armour. In addition to this, Murchad wears a crested helmet studded with semi-precious stones, as described in the *War of the Gaedhil*: 'They had on them also crested golden helmets set with sparkling transparent brilliant gems and precious stones on the heads of chiefs and royal knights'.¹ Though no such helmets have been found, the *cathbharr* seems part of a specifically Gaelic tradition of noble crested helmets that goes back to the northern Irish myth cycle of the *Tain*: 'He [Cuchulainn] set on his head his war-like crested battle-helmet, finely decorated with forty precious carbuncles and inlaid with red enamel and

crystal and carbuncle and gleaming stones from the East'.²

The second Carroll painting depicts the battle of Faughart in 1318, the climax of Edward Bruce's expedition to Ireland. Edward dies at the battle and his head is sent to the English king, thus bringing to an end the extraordinary plan of his brother Robert Bruce to unite all the Celtic peoples against the English king: 'We and our people and you and your people, free since ancient times, share the same national ancestry and are urged to come together more eagerly and joyfully in friendship by a common language and by common custom' [Robert Bruce's letter addressed to the chieftain of all Ireland c.1315]. Such a noble ideal came to little as his brother, Edward, left a trail of destruction and animosity across Ireland with his army of Scots marauders, so much so that an Irish chronicler called them 'Scots foreigners less noble than our own foreigners [that is, the English]' [*Annala Connacht*]. The battle of Faughart saw the Irish chieftains of Meath and Down united with the Anglo-Irish against a man who was no longer seen as a liberator, but just another adventurer.

According to John Barbour's 14th century poem *The Bruce*, Edward at Faughart wore an ordinary suit of armour without heraldic emblems so as not to attract the attention of the enemy. The mounted Irish chieftain in Angus McBride's painting represents the Gaelic tradition of aristocratic

Opposite
Roderic O'Carroll, son of the prince of Ely, c.1346. Painting by Angus McBride, courtesy of the Carroll Institute.

Below
Edward Bruce surrounded by an Irish chieftain and Anglo-Irish warriors at the battle of Faughart in 1318. Painting by Angus McBride, courtesy of the Carroll Institute.



warriors and wears 'primitive' garb. A 14th century manuscript illumination in Jean Creton's *Account of Richard II's Irish Expedition of 1399* (MS. Harley 1319 f.9, now in the British Library) depicts just such a warrior clad in a long shirt of mail with a saffron cloak and conical iron helmet (a version of the *cathbharr* possibly), but his legs and feet are bare and he rides without stirrups. Jean Creton's text accompanying the illumination describes a scene in which 'I beheld Macmore [MacMurrough] and a body of the Irish, more than I can number, descend the mountain. He had a horse without housing or saddle, which was so fine and good that it had cost him, they said, four hundred cows... In coming down it galloped so hard that in my opinion I never saw in all my life... any other animal run with such speed as it did. In his hand he bore a great long dart, which he cast with much skill'. Jean Creton was a French clerk travelling with Richard II to Ireland and so this is a first-hand account, notes of which he must have handed to the anonymous Parisian painter who completed the miniature between 1401 and 1405. Certainly it backs up the observations made by Giraldus Cambrensis in his *Topography of Ireland* two hundred years earlier:

'Likewise, in riding, they neither use saddles or boots nor spurs, but only carry a rod in their hand, having a crook at the upper end, with which they both urge forward and guide their horses. They use reins which serve the purpose both of a bridle and a bit... Moreover, they go to battle without armour, considering it a burden, and esteeming it brave and honourable to fight without it.'³

From repeated written and visual evidence, it appears that Irish warriors continually affected 'primitive' manners as a way of defining their differentness from English invaders, as well as it being a bravura display of manhood and ferocity, thus the

noblest of Irish warriors chose to ride without stirrups and walked barefoot. Irish warriors seem also to have drawn on a centuries old tradition of Celtic horsemanship in which spears were thrown overarm rather than carried as lances beneath the arm. A parallel and different tradition of Irish warfare in which warriors embraced armour but still managed to have it constructed in a typically Gaelic style is represented by Angus McBride's third painting of Roderic O'Carroll, a distant member of the Carroll family. Described as 'a man powerful, creditable, rich, and warlike; the principle enemy and persecutor of the English', Roderic is recorded in the *Annals of Clynch* as being slain in 1346. As the son of the prince of Ely he represents a wealthy warrior who would have worn armour typical of his period and culture.

The *Triumphs of Turlough*, written in the middle of the 14th century, describes the arming of a warrior like Roderic: 'The first piece brought to him was a trusty well-made acton (*cotun*), dense, close-ridged... from his lower throat to the point of his rounded knees. Over which... he was invested with a loose mailshirt (*luirech*) of hard glittering rings that made a rough surface, close of texture was it, with gilded border... Over his mail he drew tight... [a] round-star-studded belt, in which was hitched a long blue-gleaming dirk (*ennach*) hanging ready to hand; it was strong in the point, wide in the flat, smooth channelled, thick-backed, thin-edged, and had a decorated wooden haft... He set on him a strong-plated conical helmet; took to him a broad sword, deeply fluted, having golden cross-hilt and tracery embellished scabbard, which he girded to his side.'⁴ In 1397, a Spanish traveller, Count John de Perillos, described the noble warriors of Ireland as: 'armed with coats of mail, and wear them girded, and they have throat-pieces of mail and round helmets of iron, with swords and sword-blades and

lances... the swords are like those of the Saracens, which we call Genoese... the pommel is like an extended hand, the blades are long and narrow...'⁵

There is little visual evidence of armour in the 14th century, but these literary descriptions find a close parallel with the arms and armour depicted on Irish tomb sculpture of the 15th century and manuscripts of the 16th century. The best examples are the effigy at Glinsk, Co. Galway, the figures on the tomb at Roscommon, Co. Roscommon, and the horseman in the De Burgo MS in Trinity College, Dublin. In the reconstruction, therefore, Roderic O'Carroll is shown wearing trews and ankle boots with spurs. Over this he wears a long *cotun* or *gambeson* of vertically fluted leather. The mail is shorter than the gambeson with the throat and upper chest protected by a *sgabal* or *pisane*, a four-pointed shaped piece of mail that rests on the shoulders and may have included a hood. On his head, the chieftain wears a burbot similar in style to the ancient Greek Corinthian helmet. This is a helmet unique to Ireland at this period and is again typical of the difference between Irish warfare and that in Britain or the continent. The best surviving example of this helmet was found at Lough Henney in County Down and is now in the Ulster Museum in Belfast. 'Probably the earliest example of this type of head-piece in existence' and 'one of the most important armour documents in Europe'⁶, it has been dated to around 1380. Made of steel with reinforcing bands of bronze around the sights and on the nasal, it corresponds closely with other artistic representations of such helmets, especially the broad cheek-guards and long nasal.●

More Carroll paintings by Angus McBride will be published next month in an article on 16th century Irish warfare

Notes and sources:

1. *The War of the Gaedhil with the Gael*, edited J.H. Hood, p.163.
2. *The Tain*, translated by T. Kinsella, p.193.
3. *The Historical Works of Giraldus Cambrensis*, edited by T. Wright, London, 1863, p.123.
4. McGrath, J., 'Caithreim Thoirdhealbhaigh', *Irish Texts Society*, vol. xxvi-xxvii, 1929, pp.95-96.
5. Mahaffy, J.P., 'Two Early Tours in Ireland', *Hermathena* vol. xviii, 1919, p.7.
6. Hunt, J., *Irish Medieval Figure Sculpture 1200-1600*, Dublin, 1974, p.54.



Irish warlord MacMurrough meets the Earl of Gloucester from Jean Creton's *Account of Richard II's Irish Expedition of 1399*

The Ikko-ikki

Warrior monks, 16th century

In 16th century Japan, with the eclipse of the power of the older established Buddhist sects (see MI74), a new fanatical force promising paradise in death challenged the strength of the samurai. STEPHEN TURNBULL traces its rise and fall.

In the previous article in this series we saw how the Japanese armies of warrior monks, based at Nara and on Mount Hiei near Kyoto, played an important role in many of the episodes of samurai warfare until being destroyed by Oda Nobunaga in 1571. The warrior monks from these older established Buddhist sects (Tendai and Shingon) were not however the only religious force in action in medieval Japan, and during the sixteenth century their influence was almost eclipsed by the military strength and the fanaticism of the armies of a very different type of Buddhism — the warriors of the Ikko-ikki.

The second name 'ikki' strictly means a league, but it has also come to mean a riot, and it was as rioting mobs that the Ikko-ikki first became known to their samurai betters. The other word 'Ikko' provides a clue to their religious affiliation. It means 'single-minded' or 'devoted', and the *monto* (disciples or adherents of the sect) were completely single-minded in their devotion to Amida, the Supreme Buddha of the Pure Land (Jodo) in the West, who will welcome all his followers into the paradise of the Pure Land on their death, where they will live in happiness forever. This teaching contrasted sharply with the insistence on the attainment of enlightenment stressed by the older sects. These views are particularly associated with the priest Honen, born in 1133, who founded the Jodo sect of Buddhism, but the Ikko-ikki derive from a later offshoot of the Jodo sect, the Jodo Shinshu, which is now Japan's largest Buddhist denomination.

The head of the sect in the fifteenth century was Rennyō (1415-1499), who had achieved such fame as a preacher that the rival 'warrior monks' of Mount Hiei had burned his house and forced him to flee north to Kaga province. Here he re-established his headquarters, and very soon his followers became involved in the struggle for supremacy that was going on in Kaga province between various samurai clans. In 1488 Rennyō's Ikko-ikki revolted against the samurai as a whole, and control of the



An ikki on the rampage in a Japanese town.

province of Kaga passed into their hands after a series of fierce skirmishes. The Ikko-ikki *monto* welcomed fighting, as their faith promised that paradise was the immediate reward for death in battle, and nothing daunted them.

As the fifteenth century drew to its close the sect spread out from Kaga, and established itself in a series of key locations not far from the capital of Japan, Kyoto. Three temples, the Toro, Harisaki and Sasaki, were to be found in Mikawa province, along the great Tokaido road, which was the territory of the future shogun Tokugawa Ieyasu. In fact it was in his

successful campaigns against the Mikawa *monto* that Ieyasu learnt the military skills which were to stand him in such good stead in the years to come. Closer to Kyoto was the Ikko-ikki fortress of Nagashima, built on a swampy river delta and as confusing to strangers as it was powerful. Finally was the greatest Ikko-ikki power-base of all, the huge 'fortified cathedral' of the Ishiyama Honganji to which all the above temples owed loyalty. It was built where Osaka castle now stands, and thus threatened the capital from the opposite direction. These three main bases, with scores of others, provided the overall organisation for a fanatical army that was to

七受惣助家照

國一十萬画

千場田近臣より春永江州長島の二揆と討時故有て一旦
 と當家第之功臣より千場田辰家を殿と定操引ひく程ふ
 定と見てすや敵の引揚と追絶て討取と八方より取圍辰家
 偏るれ切散追拂大田川追来所ふ兼て手配やあくる早舟
 川上に押登千場田勢の直中、釣ひて鉄炮と打程ふも
 勢も右往左往に駈走る此時、いへるあくる
 の常束の馬印と敵の爲ふ奪れぬ一揆の中より
 引返とあると惣助押止己み任玉とて
 呼れ二同み手とくくると笑々千場田
 引返とあると惣助押止己み任玉とて
 呼れ二同み手とくくると笑々千場田

追束惣助片手抛ふ
 勢に恐て逃散るれ
 来喜か堪に
 セ寵愛
 前ふ持
 家照と名乗
 せう後年辰
 久吉爲ふ軍
 千場田と名乗
 土を安く居城ふ入
 陣没はる昔佐藤
 君の名を賜り判官殿と
 せうそれをも増じ行と



水略傳史



The Gansho-ji, part of the defences of the Nagashima Ikko-ikki.

occupy the time and resources of all aspiring samurai generals until 1580.

Tokugawa Ieyasu's fear was that the Mikawa *monto* would try to do in his province what Renno's men had achieved in Kaga. When hostilities first began Ieyasu's retainer Sakai wrote to the temples urging them to reflect on the fact that 'shaving the head and wearing priestly robes is only to put on the outward signs of sanctity, like a bat that pretends to be a bird'. But letters had no effect, and soon the young Ieyasu was engaged in fighting the monk armies at the battle of Azukizaka in 1564. The Ikko-ikki were well supplied with matchlock muskets, which had only been introduced to Japan some twelve years previously, good evidence of how these monk armies were now no peasant rabble, but at the forefront of military technology. Ieyasu took a prominent personal role in the fighting, challenging several of his opponents to single combat, a form of samurai warfare that was rapidly becoming an anachronism. On one charge, with his spear held out like a lance, an arrow struck the reins of his horse, just missing his body. He caught up with his quarry and dealt him two slashing strokes down the back of his armour as he turned to gallop away. On another occasion Ieyasu felt a bullet strike his armour, but thinking that it had not penetrated he fought on, and it was only when he got back to Okazaki castle when the fighting was over that he realised how near he had come to being killed, because when

his servant stripped off his body armour two bullets fell out of his shirt.

It was to Ieyasu's great advantage that many of the Ikko-ikki supporters among the samurai class had considerable divided loyalties. They were vassals of Ieyasu, but members of the Jodo Shinshu sect, and at first this religious inclination had made them choose the Ikko-ikki side in the battle. But as time wore on the traditional samurai loyalty to the lord proved the stronger, and many who changed sides, such as Ishikawa, were to become Ieyasu's most trusted companions. Needless to say, such loyalty did not extend down to the peasants who comprised the bulk of the Ikko-ikki armies. To them all samurai were ultimately enemies, eventually to be swept from power in the province. Ieyasu also benefited from the support given to him by his own particular sect of Buddhism, the Jodo, the original Amidist sect from which Ikko had sprung. Jodo was represented in Okazaki by the Daiju-ji, the temple where all Ieyasu's ancestors were buried, and sent its own contingent of warrior monks to fight on the Tokugawa side. With their help the Ikko-ikki of Mikawa were finally crushed. A subsequent peace conference established that Ieyasu would restore their temples to their original state, which he did, by burning each one to the ground, arguing that a green field site was the original state.

The Nagashima area, where the Kiso and Nagara rivers enter the sea, is still an evocative place even to this day. Old maps show how the layout of the river delta has continually changed over the centuries, moving reed plains and sandbanks, and flooding once productive rice fields. Nagashima now has the appearance of a long

flat island, crossed by modern roads and bridges. The original site of one of the most important Ikko-ikki temples, the Gansho-ji, is now under water, but the temple was relocated, and its wall still gives it the appearance of a fortress, which must be how it looked in the sixteenth century. In its grounds stands a unique memorial to the Ikko-ikki, consisting of a stone obelisk in front of which are two lanterns. The Gansho-ji formed part of the defence of Nagashima, together with a stockaded complex known as Nagashima castle. Of this only the main gate survives.

It was Oda Nobunaga, the first of the three unifiers of Japan, who faced the Nagashima Ikko-ikki. On several occasions from 1570 onwards Nobunaga had faced attacks from monk armies. He had settled Mount Hiei by his surprise attack of 1571, and in 1572 had destroyed the Ikko-ikki in his home province of Owari by luring them out of their stronghold on the pretext of a truce and then massacring them as they stood defenceless, but Nagashima, which was provisioned from the sea by its parent the Ishiyama Hongan-ji, was not so easily overcome. In July 1574 Nobunaga sent a large army against Nagashima, who drove the Ikko-ikki back from the third bailey of their castle into the inner bailey, though with fierce resistance. Nobunaga's army were helped by the recruitment of a pirate force from the Ise coast, who kept up a bombardment of the Ikko-ikki positions from their ships, thus cutting off any hope of a relieving force. Cannon and fire arrows were trained on the defenders' wooden lookout towers. By the end of August 1574 they were ready to surrender, but Nobunaga, showing the ruthlessness with which he had destroyed

Opposite

Menju Ietora fights for the Ikko-ikki at the siege of Nagashima in 1574. Ietora has captured a *gohei* standard from the enemy.



Flag of the Ikko-ikki, promising 'He who advances is sure of salvation, but he who retreats will go to hell'.

Mount Hiei, refused to accept any terms, even though the garrison were clearly dying of hunger. Instead he built a stockade around the remaining inner bailey, into which 20,000 Ikko-ikki were crammed. When the wind started blowing from off the sea he set fire to the strongholds, and all the Ikko-ikki within were burned to death. The memorial noted above commemorates this huge and unnecessary act of slaughter, and the bravery of the steadfast peasant army who had stood up to the most powerful samurai army in Japan.

With the destruction of Nagashima, the fortress cathedral of Ishiyama Hongan-ji stood alone at the centre of a complex of outposts. Like Nagashima, it was built upon a series of islands on a river delta. Unlike Nagashima, however, the river did not open out on to the wide Pacific Ocean, but on to the narrow Inland Sea, which was largely controlled by the fleet of Nobunaga's deadly enemies, the Mori clan. In August 1575 Mori demonstrated his superiority by breaking Nobunaga's blockade of the Ishiyama Hongan-ji and taking necessary supplies into the garrison. To some extent the fortress had been self-sufficient, as indicated by a valuable

eye-witness account by the Jesuit missionary Father Caspar Vilela, who visited the place in 1561 and recorded his impressions. Being used to the religious discipline of the Jesuits Vilela was scornful of so-called monks who did not fast, appeared to have no rule, and who were more mercenary soldiers than anything else. Their discipline was indeed that of the soldier, and each *monto* was required to make seven arrows every day, and take part in weekly archery and gunnery competitions. Their sharp swords, noted Vilela, could cut through a man in armour 'as easily as a sharp knife cleaves a tender rump'.

During the first part of 1576 Nobunaga was preoccupied with building his magnificent castle of Azuchi and Japan enjoyed a break from fighting, but in June of that year he returned to the fray and made a land-based attack on the Ishiyama Hongan-ji with a force of 3000 men. This may have been more of an exercise in testing the defenders' mettle, because 15000 were pitted against him, and Nobunaga was forced to withdraw. Like Ieyasu before him Nobunaga was personally involved in the hand to hand combat, and received a bullet wound in his leg. He then decided to change tactics, and

reduce the outposts of the Ishiyama Hongan-ji, thus progressively isolating the centre. In a series of campaigns he destroyed the Ikko-ikki outpost of Saiga in Kii province to the south, who had been able to support the fortress from the sea. For good measure he also attacked another hornets' nest of warrior monks at Negoro in Kii province. The Negoro monks, were not Ikko-ikki, but of the Shingon sect, yet like the other old sect based on Mount Hiei had kept their army, and had built up a reputation for skill with firearms. Nobunaga's army set fire to the monastery, but he spared the lives of the inhabitants by requiring them to swear that they would never support the Ishiyama Hongan-ji again.

The loss of this support alarmed the Ishiyama Hongan-ji, and the Abbot Kosa sent requests for help through all the country. Many Ikko-ikki branches responded, such as the Senko-ji of Kanazawa, who fought under the banner of two cranes, and the Zenpuku-ji of Edo, who had a red banner with the gold *sotoba* design. Thus reinforced by fellow fanatics the Ishiyama Hongan-ji prepared to face Nobunaga's final assault. The garrison were under the command of a certain Shimotsuma Nakayuki (1551-1616), who was a priest of the Ikko-ikki. In more confident days it had been the intention of the Ishiyama Hongan-ji to march on the capital and make Shimotsuma the new Shogun, but it has now become clear that their support was coming only from within their own sectarian ranks. No samurai clan had responded when Uesugi Kenshin, who had threatened Nobunaga from the north and supported the Hongan-ji, died in 1578. His death was so convenient for Nobunaga that ninja were suspected. The Mori clan were also unwilling to engage in a full-scale struggle with their rival, so the Ishiyama Hongan-ji became progressively isolated, just as Nobunaga had planned. Dressed in a suit of armour, and under a red banner with an enormous golden sun disc, the commander Shimotsuma directed his operations as Nobunaga's armies whittled at the outer lines of his defences. A successful blockade was put up, and daily the attacks continued, using up the cathedral's precious ammunition supply. Very soon Shimotsuma's supplies began to dry up, and Mori and his fleet did not move from port. A conference was held between the Abbot Kosa and his colleagues, and in April 1580 an Imperial Messenger was sent with a letter from no less a person than the Emperor of Japan, suggesting an honourable surrender. The letter had of course been prompted by Oda Nobunaga, but it did the trick, and the fortress surrendered a few weeks later. The actual surrender terms, which were bloodless, were accepted by Kosa's son, and eleven years of bitter fighting came to an end. It also marked the end of the long story of the Japanese warrior monks.●

Throwing the Dead Horse

Reconstructing a medieval trebuchet

Huw Kennedy has always dreamed of building a full-size trebuchet. At first, he would settle for nothing less than launching a dead horse through the air but GERARD F. TIERNEY and ANDREW McCARTHY persuaded him to accept a piano instead. They tell the story of his research and the film they made about it.

Huw Kennedy, internationally renowned arms and armour expert, has wanted to build a medieval siege machine, most particularly a trebuchet, since he was a schoolboy. Locating

the documents to help in this task, then building a series of experimental models, took over thirty years, but his dream has at last been realised. We filmed his magnificently successful, fully operational, trebuchet in action in 1991. Since then our film has travelled to more places than we ever thought likely. We have also learnt a great deal about siege engineering, and about the attitudes of foreign audiences to the sight of burning pianos...

Trebuchet, in French, means a balance with a heavy weight on one end. Kennedy's definition: '... an engine of war used for throwing large weights. There is a long beam, and a heavy counterweight on one end

of it. The beam is in a frame, so that when you let it go, the weight would hang downwards. If you pull the long end of the beam to the ground, the weight will then be up in the air. You attach a missile, by means of a sling, to the top end of the beam. When you release the top end, the missile will fly and the weight comes downwards.'

Siege machinery dates back to classical times: smaller machines, the catapult and ballista, were used by the Greeks and Romans. There are reports of classical sieges

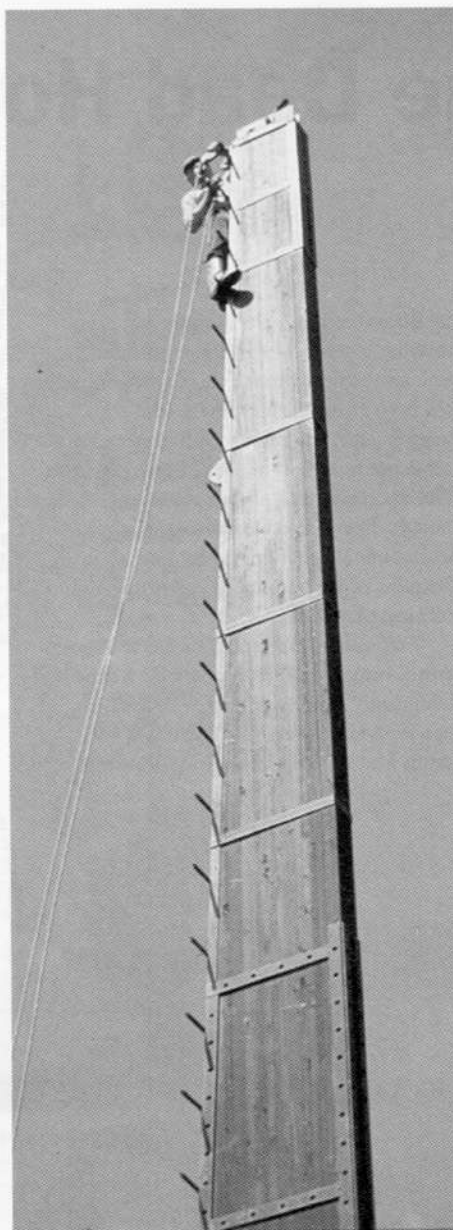
Huw Kennedy directs the preparation for triggering the trebuchet. (Christine Foulger)



where huge stones were said to have been thrown, which might suggest trebuchets; most scholars feel that this is unlikely. Kennedy sees catapults and ballistas as fifteen feet high, throwing rocks the size of a football.

The trebuchet is thought to have been invented about 1200. Kennedy has thought long and hard about the practical uses of a trebuchet in medieval times: '... a machine that threw a fifty-pound projectile could certainly do damage to buildings inside a castle... smaller trebuchets of about thirty foot high, that is with about a twenty foot beam, would have been useful things in warfare.' He paints a vivid picture of an army besieging a city: large numbers of workers cutting down trees, the timber sawn or cut square, two or three trees strapped together with iron or rope to make a beam, the trebuchet put to work against a weak point in a castle's walls. Transportation would have been a problem; a trebuchet of thirty or more tons would have been likely to sink into the ground if put on wheels, though logs or rollers could have been used. The most likely solution would have been to construct the trebuchet in situ. Kennedy estimates a machine with sufficient ammunition and manpower could have been operated three times an hour, rocks being the most common missiles, though the stone balls found at the Krak des Chevaliers in Syria 'appear to be too large to be shot out of a cannon' and might have been shot from trebuchets. Castles were not just massive stone buildings but often partly made of timber, for example in England, Stokesay Castle: '... it was only later when cannon came into much use that the walls tended to be stone and earth banks which were faced with stone, more difficult to destroy. If you look at a medieval castle the walls are simply built of stone and you could push them down with a large missile. Battering-rams were attacking the wall from the bottom which obviously was its strongest point, simply because of the weight of masonry on it, whereas with a missile-throwing engine you can attack the walls from the top, at their thinnest part. The missiles which are thrown from a trebuchet normally come at quite a high angle like a mortar bomb, but if you had a consistent number of stone missiles which were the same weight, you'd soon get the range, so you could probably drop them on to a fairly small area of fortification and make a breach...'

Wall fortifications were eventually strengthened, but methods of warfare had moved on. Nonetheless a trebuchet was used at least once in the sixteenth century: in Cortez's siege of Mexico City, his army included a veteran of the Italian War who stated he could remember how to construct such a machine. The attempt was a failure; a large stone was propelled upwards, landed on top of the machine and smashed it to pieces.



Richard Barr climbs to the top of the launching arm of the trebuchet. (Christine Foulger)

More recently Napoleon III's experiment at Vincennes is well documented. Kennedy: '... after the missile had left the machine, the machine started to shake itself to pieces...' There is little written documentation from medieval times; there are only illustrations, and Kennedy is deeply sceptical of these, even the 'Codex Atlanticus', illustrated by Leonardo. Napoleon's report, despite his failure, is of some use: he had grasped the importance of the missile's weight. Because a heavier missile would release earlier than a light one, it was necessary, if changing the weight of the missile, to change the angle of the release. Kennedy, determined to build his own trebuchet, and aware of the subject's fascination for mathematicians and engineers, commissioned calculations: '... absolutely way out... there are so many variables and it is a very difficult thing to calculate even if you've seen it work.'

Putting theory into practise was a gradual process. In the late 1970s Kennedy produced a three-foot-high model made out of Meccano, then one fifteen feet high made out of scrap iron. Pulled down by hand, it hurled a six-pound iron weight about forty yards. Relatives of Kennedy made one thirty feet high, out of telegraph poles, with some success. The counterweight was one ton, the beam twenty feet, and a fifty-pound weight could be projected two hundred yards. Kennedy's neighbour, Richard Barr, owner of an engineering factory, joined him: they laid plans for a full-scale trebuchet, the size of a double-decker bus. Kennedy recalls: 'I realised then that if you increase the size, the performance increases more than the increase of the size...' The recurring problem with medieval drawings was that the artists seemed to have no idea of scale as we understand it; Kennedy's understanding, gained from his smaller working models, was that if one built a trebuchet strictly according to medieval drawings, it would not work. The best indication of scale was that some drawings featured dead horses as missiles. Kennedy wanted a trebuchet capable of throwing a dead horse 'because it gives you a definite yardstick... Even Leonardo draws a machine with a dead horse in it... A horse must weigh roughly... around half a ton... so you've got to have an idea of a machine that would do that...'. He assumes the purpose of throwing a dead horse would have been twofold: 'spread plague and pestilence... an excellent missile because it's a half-ton instant missile.' A besieging army would have no shortage of dead horses, and no enthusiasm for burying them.

Kennedy wrestled with calculations to create a more powerful machine. Barr's technical and material help were to prove invaluable (as, later, was his head for heights). Kennedy's preoccupation was still how to attach the weight to the end of the beam. 'The old illustrations have a swinging weight basket, which seemed a very logical way of doing it. If you make a model, it appears to work very well, but when you make a full-sized one, and the weight's several tons, it swings about... it knocks itself to pieces.' Hence Napoleon's mistake: '... they didn't strengthen and alter the machine, which we did to ours. Napoleon gave as a guideline... that the beam should be about fifty feet long, and that it should have a six, seven, eight ton counterweight. They found it impossible to do that, because the beams kept breaking. The beams were made of a single tree... and they broke and so they ended up with a beam about thirty-three feet long... and they were only able to throw cannonballs.' Recalling one accurate aspect of the old drawings, Kennedy realised several pieces of wood had to be strapped together. He had a sixty-foot laminated wooden beam made to his specifications, and fixed a weight-box firmly on one end. The box was a

hollow cube, with weights added or removed, depending on the weight of the missile. An adjustable release peg was used on top of the beam, to help control the angle of throw. Kennedy and Barr were now convinced they would succeed.

In order to prepare the trebuchet for shooting, Barr climbed to the top of the beam and attached a steel cable to the top. This cable was run around a pulley anchored firmly in the ground, then affixed to the rear of one or two tractors, and the top end of the beam hauled down to ground level and anchored to the trigger so that the missile could be attached. One end of another steel cable was then fixed to the trigger, the other end being fixed to a tractor. The tractor moved forward, the trigger was released, and the trebuchet let loose its missile. For ammunition Kennedy used various large objects, including pianos. The results were successful, though for Kennedy a little unsatisfactory: 'We've thrown a one-hundredweight iron weight for two hundred and thirty-six yards... when you get down to three, four, five hundredweight weights we haven't had a proper missile... pianos have very poor wind resistance, you can't throw a piano more than about a hundred and fifty-

odd yards'. Kennedy wanted more: 'We've done part of the research, in that we've got a machine that'll throw a large weight around, but we have got no means of finding out what effect it has on a target'.

When film director Andrew McCarthy saw the trebuchet in action, he knew that a spectacular and entertaining film could be made. There were several potential films in the subject; his eleven-minute film was carefully planned in order to tell the best story in the most entertaining way. The intention was to present the audience with a puzzle, whose solution only came at the end of the eleven minutes.

A five-person crew visited Kennedy and Barr in March 1991. Cameraman Maxim Ford captured eerie slow-motion effects of a piano sailing silently through the air, to land in a burst of flame, as a five-gallon drum of petrol attached to the piano exploded. Pianos were selected as the best missiles for the film, as it seemed that these were the most bizarre, and therefore the most amusing, things which could be thrown. Several were launched, including one which almost landed on top of the crew.

The film, entitled '*Higher Mathematics Made Fun*', was completed in August 1991, and first shown at Pinewood to Kennedy, his colleagues, and a bemused reporter from the '*Mail On Sunday*'. The film had a successful trip round the world's film festivals.

McCarthy and Executive Producer Gerard F. Tierney witnessed at first hand the extraordinary responses evoked in audiences. Many people refuse to believe the story is true; some are convinced Kennedy and Barr are fictional characters or avant-garde performance artists!

Subsequently, Kennedy was contacted by other sections of the media, appearing on Japanese television, and constructing a machine for the popular American series '*Northern Exposure*'. Meanwhile, two Texan enthusiasts, who had been planning to build a larger, all-metal trebuchet, capable of throwing a three-ton weight, contacted Kennedy for advice, saw a tape of our film, and flew over to England solely to see Kennedy's trebuchet in action. We are planning a longer film on their project, though still involving Kennedy's expertise. Our original short film was bought by Channel Four television, who transmitted it under the title '*Toys For The Boys*' in March 1994. Two further television screenings are planned. Channel Four felt that the film was slightly too cryptic for television audiences as it stood, and requested an additional voice-over from Kennedy explaining the design and building of his machine. The new version was well received by press and public, a suitable tribute to the dogged and persistent research carried out by Kennedy and Barr to make the trebuchet live again •

The trebuchet in profile with piano ready for throwing. (Christine Foulger)



Armed to the Teeth

The Royal Army Dental Corps Museum at Aldershot is one of the most unusual military museums in Britain. JOHN NORRIS takes a visit.

As military museums go the Royal Army Dental Corps Museum is a very small affair, housed in just a single room, but lodged in its display cases are some fine and unusual artefacts. Indeed the museum possesses two unique mementoes of Nazi memorabilia which are unlikely to be repeated by any other military museum. One of these are some of Rudolf Hess's teeth, which were removed during treatment in England after he was captured in Scotland in 1941. The other item is the actual death mask of Reichsführer-SS Heinrich Himmler, who committed suicide after capture in 1945.

The RADC was formed by Royal Warrant on 4 January 1921, with the Special Army Order being signed by Winston Churchill. By 1922 the new regiment had 67 officers on strength and 132 other ranks. By 1939 this expanded to 132 officers and 326 other ranks, which is not bad considering it was peacetime. The current cap badge of the RADC is a dragon's head facing to the left clasping a sword in its jaws, with hilt uppermost, surrounded by laurels. It is surmounted by a royal crown and the motto in a scroll at the base reads *Ex Dentibus Ensis*.

Since its formation 63 years ago, the regiment has been deployed in support of all campaigns undertaken by the British Army in that time. This includes the Second World War, Suez, Korea, Falklands, the Gulf War, and members are currently serving in Northern Ireland and Bosnia.

The display cases lining the room show how important it has always been for the soldier to have good oral hygiene. In the 17th and 18th Centuries he needed his teeth to bite the paper cartridge in order to load powder into his musket. Toothache is no respecter of a man's rank and it can strike at any time. The role of the RADC is to see that today's serviceman does not suffer unnecessarily, but the regiment does much more than just fill cavities. In Northern Ireland, for example, if a man is wounded to the face and jaw, it is up to the technicians to help in repairing the damage and rebuild the jaw if possible. In fact, the importance of dentistry in warfare is summed up by Montgomery's insistence that

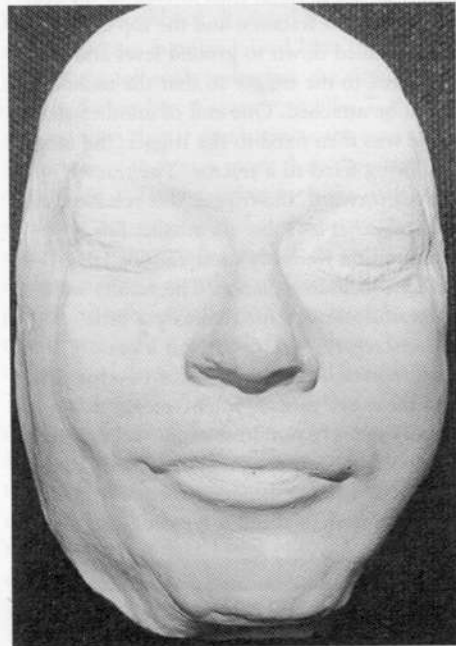
several dentists chairs be taken in on the beaches at D-Day as part of the logistics backup.

For visitors with strong stomachs, there is a selection of monochrome 3-D photographs, with special viewer, which show various facial injuries suffered by troops in the First World War. The cases containing artefacts from the Second World War feature a wide selection of dental equipment ingeniously manufactured from the brass of spent shell cases. A fair number of RADC personnel were captured in the Far East and suffered terrible hardships as prisoners of war in Japanese hands. Some interesting items from this episode show tooth brushes made from the fibres of coconuts. No dentist is complete without his treatment chair and there are several on display, which illustrate how they evolved over the years. One of these chairs dates back to World War One, and there is an interesting field dentist's kit complete with packing cases to allow it to be transported and air dropped if required. There is even a German Army chair, and one of the Corp's most recent acquisitions is an Iraqi Army field dentist's chair.

The RADC museum is not only about teeth and pliers. The Corps has come under more than its fair share of enemy shellfire and suffered casualties the same way as any other unit in the British Army. Here is the museum of a regiment whose history is still being written by the simple fact that its work has to go on wherever the British Army serves. Unlike the museums of some now disbanded regiments, the RADC museum will continue to add to its display. Visitors researching aspects of a particular campaign will come away with a whole new outlook after viewing the RADC museum's display.

The RADC museum is visited annually by some 1200 people, made up of a mixture of civilians and service personnel. Due to current security concerns, it is advised that visitors first telephone to declare their intention of making a visit. In this way a member of staff will be on hand to talk to you and answer queries. Do not be put off by the fact it is in the middle of a functioning military barracks, the RADC museum is to be visited and enjoyed by all those interested in military workings.

Open weekdays between 10.00 to 12.00 and 14.00 to 16.00 hrs. Closed weekends. Telephone the curator at Aldershot 0252 347782 to arrange a visit●



Himmler's death mask, 1945.



Captured German Army dentist's chair from World War Two.

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Thure de Thulstrup

With his experience of fighting in the Franco-Prussian War, this renowned American artist brought a fresh realism to military art. PETER HARRINGTON, curator of the Anne S.K. Brown Military Collection, describes his career.

Thure de Thulstrup was born on April 5, 1848, in Stockholm, Sweden, to a prominent family. His father, Carl Magnus Thulstrup, had served in the army and was a member of the Swedish ministry, serving for a time in the naval defence office. The young boy was to follow in his father's footsteps receiving his education at the National Military Academy in Stockholm, where he graduated in 1868 as a lieutenant in the artillery. As Thulstrup himself wrote, 'I was more fond of fighting

then drawing in those days, and so, lacking war at home, I joined the French army in Algiers as a zouave.' With the outbreak of war with Germany in 1879, Thulstrup transferred to France and saw service in the Army of the Loire achieving the rank of captain. It was during this period that he began to study drawing particularly topographical engineering, and a year after the end of the war, he journeyed to Canada and obtained employment as a civil engineer.

Thulstrup's interests increasingly turned to creative art and he moved first to Boston hoping to further his studies, and then on to New York in 1876, where he enrolled as a student in the recently organized Art Students' League of New York. Shortly thereafter, he found work with the *Daily Graphic* where his life as an illustrator began. He stayed with the paper for several years

before moving on to Frank Leslie's as a staff artist where he worked with Henry Ogden among others. In 1880 he moved to Harper and Brothers as a general illustrator for their publications and he stayed with the company for the next twenty years, although he continued to do freelance work for other publishers. It was during this period that he produced some of his finest drawings in black and white, and it was also with Harper's that Thulstrup travelled extensively. On one visit to Russia in 1888 to sketch the Kaiser visiting the Czar, he collected sketches for the book *The Czar and his people*.

Thulstrup's reputation as an artist of military life drew the attention of the Century Publishing Company who were commencing their series of war articles. They invited the artist to submit drawings for the series, and these served as illustrations for



Battle of Spottsylvania, 1864, American Civil War, painted by Thure de Thulstrup.

battle accounts by former generals, such as G.T. Beauregard's *The Battle of Bull Run*, W.B. Franklin's *Rear-Guard Fighting at Savage's Station*, and U.S. Grant's *The battle of Shiloh* which were published in *The Century Magazine* in 1884 and 1885.

The 1880's were his most prolific period not only as an illustrator but as a painter. He exhibited six canvases at the annual exhibition of the National Academy of Design in New York, three of which were military scenes: the *Battle of Kennesaw Mountain, Georgia*, of 1887, *Limber Up!* of 1888, and *Seridan in the Valley*, of 1889. Thulstrup's preoccupation with Civil War leaders is evident in a fine canvas of 1887 showing General Sherman seated on a brown horse in a meditative mood watching from a slight rise as his troops march past during the 'March through Georgia'. Many of his water-colours of Civil War scenes were published in *Harper's Weekly* such as his *Horse Artillery going into Action* of May 1887, and in *Battles and Leaders of the Civil War* published by the Century Company in the same year. It was not only the Civil War that provided the artist with material. After extensive travels in the southern United States, he painted several canvases depicting

colonial times.

In 1888, L. Prang and Company of Boston published a series of aquarelle facsimile prints under the title *Prang's War Pictures* after water-colours by Thulstrup. There were eighteen plates in all, illustrating many of the famous battles of the Civil War along with six scenes of naval warfare by another artist, J.O. Davidson. In one scene of Chattanooga, Thulstrup used an account of General Grant's to compose his picture: 'General Thomas, with his staff, General Gordon Granger, commander of the corps making the assault, and myself and staff, occupied Orchard Knob, from which the entire field could be observed.' Thulstrup obtained information for these pictures from participants, which provided a degree of authenticity. After seeing his *Sheridan's Final Charge at Winchester*, Brigadier-General Theodore F. Rodenborough, wrote to the artist, 'It has given me great pleasure to watch the development of your beautiful and truthful water-colour drawing... and heartily congratulate you upon the fidelity with which you have reproduced the scene as I remember it. By the aid of certain soldiers who saw the charge from opposite sides, Union and Confederate, you have

attained an exceptional degree of realism in the composition of your picture.'

Harper's ran a series of articles on European armies of the day, between 1890 and 1892 illustrated by Thulstrup and his contemporaries, Frederic Remington and Richard Caton Woodville. These articles were re-published in 1892 in one volume under the title *The Armies of Today*. By the mid-1890's, the United States was becoming involved with various conflicts in Cuba and the Philippines which eventually led to war with Spain in 1898. These campaigns provided many opportunities for Thulstrup and although he did not go to the front like Remington and other artists, he 'worked-up' many sketches sent in to Harper's by soldiers and other observers.

By the turn of the century, he was regarded as one of America's leading military illustrators and received honourable mention for his drawings at the Pan-American Exposition, at Buffalo in 1901. After the death of his wife in 1915, his eyesight deteriorated and his services were increasingly being replaced by photography. He died in his 83rd year at St. Luke's Hospital, New York, on June 9, 1930 ●



Battle of Gettysburg, 1863, painted by Thure de Thulstrup.

Miners on the Western Front

Tunnelling Companies Royal Engineers, 1915-17

Possibly the most frightening of all the tasks carried out on the Western Front was that carried out by the Tunnelling Engineers. Battling against poisonous gas and German counter-mining, they planted explosives beneath the enemy frontlines. SIMON JONES explains the lethal reality of one of these operations.

The First World War saw a huge expansion of the British Army and the enlistment of thousands of civilian experts who dramatically improved the effectiveness of many of its technical branches. Miners and mining engineers were specially recruited into the Army from tunnelling contractors, collieries and mineral mines. Their enlistment was to elevate the ancient science of military mining to its highest level of professionalism and unleash a devastation as yet unsurpassed.

The miners' task was to tunnel beneath the opposing front line trenches to detonate charges of many thousands of pounds of high explosive. The infantry would then rush forward to occupy the raised 'lip' of the crater and gain a foothold in the enemy trenches. These siege warfare tactics were applied on a vast scale yet the length and depth of the entrenched defences prevented the decisive success possible when mining against a fortress.

Miners laboured relentlessly, from late 1914 until mid-1917, at this ferocious and specialised underground war. Offensive drives were repeatedly destroyed by camouflets designed to destroy the surrounding enemy mines but not break surface. Above ground in the active mining sectors the infantry waited tensely, unaware of where the next mine would be detonated, amid a landscape of vast, over-lapping craters.

In response to German offensive mining operations, the first 'Tunnelling Companies Royal Engineers' were formed in the spring of 1915 from small ad hoc units already at work in France. The miners were promised seven shillings a day, dressed in khaki and shipped to the front. By Autumn 1916 the British tunnellers were slowly gaining an advantage over the more technically orthodox Germans. The British brought with them a new explosive, ammonal, with much superior lifting capabilities. They also taught

the most advanced rescue techniques, for tunnellers were liable to be buried alive by mines and camouflets; more hazardous still were the poisonous and flammable gases released by underground explosions.

Army Mine Schools were formed in France towards the end of 1915 to train personnel of the Tunnelling Companies in the use of breathing apparatus for rescue purposes. An officer with experience of colliery rescue, Lieutenant R C Smart, was appointed to command the school serving the British First Army. Prior to the outbreak of war, Rex Smart had worked as a mining engineer at the Cannock and Rugeley Colliery in Staffordshire and the Dudley Mine Rescue Station. Already a Sergeant in the Staffordshire Yeomanry, his mining background brought him a temporary commission as Second Lieutenant and a posting to 176 Tunnelling Company on the Western Front in September 1915. After about three months he took command of the First Army Mine Rescue School, at Houchin, seven miles behind the front line. Then aged twenty-three, Smart was already familiar with the 'Proto' breathing set used in mine rescue. This self-contained apparatus, made by Siebe Gorman, was developed in 1902 from the 'Fluess' apparatus, made by Siebe Gorman, was developed in 1902 from the 'Fluess' apparatus used at the Seaham colliery disaster of 1881. It combined a regulated flow of oxygen, carried in twin cylinders, with carbonate of soda in a breathing bag which absorbed exhaled carbon dioxide. The wearer could remain in a dangerous atmosphere for two hours.

Smart has left a detailed account of the work of his School in the form of a manual of the Proto Set in military mine rescue work (Smart 1922). He regarded careful selection of men for training to be all important, rejecting those who were physically weak or had breathing difficulties. He was also precise about their personal qualities, requiring the possession of common sense, adaptability, 'sound, steady, and sober nerves... good judgement, and be able to carry out their duties in noxious atmospheres competently and with coolness and precision.' (Smart

1921: 39).

These men underwent an intensive nine day course; those who passed the practical and theoretical examinations were formed into company rescue squads on permanent stand-by. Those who failed were returned to their units as unfit for rescue work.

The most dangerous of the gases produced by mine explosions was carbon monoxide, repeated detonations causing large accumulations in mine workings. One Tunnelling Company in a month suffered twelve killed, twenty-eight hospitalised and sixty slight carbon monoxide cases. An odourless and colourless gas, over 0.1% carbon monoxide is dangerous to life, 0.2% causes loss of consciousness in twenty to



Mine rescue personnel under instruction at the Chatham Mine Rescue School, September 1917. The school was based on those set up in France. (RE Library)

thirty minutes, 0.3% in ten to fifteen. Initial symptoms are giddiness and lightheadedness, noises in the ears, blurred vision and fatigue. Sometimes miners appeared drunk, described by the tunnellers' Medical Officer, Captain Dale Logan RAMC, as 'laughing immoderately, swearing and singing or shouting'. In other cases men became languid, 'with an irresistible desire to rest'. Death often occurred in a convulsive seizure; cheeks and lips remained pink in death, which Logan regarded as 'wonderfully lifelike' (Logan 1923: 561, 563).

Lingering concentrations of carbon monoxide allowed men unknowingly to penetrate a considerable distance into a gassed mine. They felt no ill effects until the accumulations of the gas in the blood stream induced physical symptoms which rendered their efforts to escape impossible. The lethal consequences of carbon monoxide were exemplified in January 1916 when Smart was called to a gallery at Givenchy. A German blow had killed six miners and two more had been overcome when attempting a rescue without breathing apparatus. Smart found the bodies with mouths stained by frothy

blood-stained mucus; he could not remove them as they were jammed together so tightly in the tiny tunnel.

Casualties could be avoided through immediate oxygen treatment but the mental effects could be permanent. Smart noted the symptoms of inhaling CO: 'On recovering consciousness men are frequently dazed and confused, or may be delirious and fight, incoherent, shouting, laughing, or crying, in some cases very drowsy, may get sudden collapse and death in serious cases.' (Smart 1921: 152).

According to Logan, some 'would behave in the most childish, silly fashion' (Logan 1923: 564). The mental confusion caused by carbon monoxide might persist for several weeks. One man, nine days after gassing, appeared fit but could not recall his name or unit, 'he wept when told to cross the room, and said, "Doctor, I love you."' (Logan 1923: 568).

The First Army sector, which Smart's school served, was one of the worst for carbon monoxide gassing as the predominantly chalk strata absorbed large quantities of gas. Camoufflers in particular

trapped gas underground which could be released, under pressure and without warning, as miners broke into a fissure or blocked tunnel. At one time there were 250 mine explosions a month on the British front, of which at least half were camoufflers. This large number of blows combined with the chemical stability of CO, the permeability of chalk and the pressure developed by detonating ammonal to cause 'gas-logging' of the strata in many sectors.

Loos was one of the most active mining areas of the First Army, since the offensive of September 1915 when the British had captured Hill 70. This specific sector was worked by 258 Tunnelling Company, commanded by Captain W.A. Pope RE. In late summer 1916 it became the scene of a local but intense underground struggle when the Germans seemed on the verge of literally undermining the whole British position. On 17-18th August miners in No 3 Main, a British defensive tunnel which ran out beneath no mans land, reported the sounds of Germans at work. Using the geophone, a French invention which detected both the distance and direction of underground sounds, it was estimated that they had passed thirty feet below the British tunnel and were approaching the front line. Pope charged the tunnel with a large camoufflet of 4,000 lbs of ammonal and fired it on 21st August. A day later the Germans could be heard clearing out their tunnel, which was evidently still intact, and by 24th August they were once more driving towards the British line. On 28th they were again located in a deep gallery about one hundred feet deep and sixty feet south of No 3 Main. Determined to halt the German approach, Pope warned the 40th Division partially to evacuate the front line and began to run a gallery from No 3 Main to meet it.

On 1st September it became evident that the Germans had passed the British lateral gallery. This ran parallel to the front line and was the last line of underground defence. The following day, however, they had stopped driving forward and it was surmised that they were laying a charge. This was confirmed on 3rd September when the sounds of tamping, or blocking, the tunnel were heard. 40th Division was warned to clear the front line and did so by 7.30pm. After a tense seventy-five minutes, a large charge erupted in no mans land blowing in one hundred feet of the British trenches. It was a day before 258 Company could make a full underground inspection. The three main tunnels in the sector were found to be badly gassed and several galleries and two chambers prepared for charges were destroyed. Their enemies' defensive system thus effectively crippled, the German miners resumed their relentless drive to the British front line. On 11th September the Germans were again heard clearing out their gallery past the British lateral. Pope decided to charge this point with 6,000 lbs



RE. Corp! Hor. Sery Foley. Sery Preece. Corp! Bradley. U.S.A. U.S.A. U.S.A. U.S.A. Corp! Thomas. U.S.A.

ammonal but there was a further disaster on 13th September when a pocket of gas ignited in No 3 mine and a badly gassed NCO had to be rescued by the Company Proto squad. The tunnel remained too badly gassed to enter without apparatus throughout the 14th. On the evening of 15th, Pope reported the situation to the Controller of Mines, Lieutenant Colonel Guy Williams RE. He immediately placed Lieutenant Smart at Pope's disposal to charge and tamp No 3 Mine in Proto apparatus to halt the German drive.

The following morning, Sunday 16th September, Rex Smart arrived and took charge of the operation to charge No 3 Mine. The dangerous amount of carbon monoxide from the blow of 3rd September was immediately evident. It was customary for rescue squads to begin wearing apparatus in the trench leading to the mine shaft after a gassy blow, such was the insidious manner in which carbon monoxide could spread. In the dug-out at the shaft head men were experiencing headaches from the carbon monoxide backing up from the mine and a canary was placed here as a continuous precaution. Smart preferred canaries to mice as the symptoms of gassing — a lack of chirpiness, panting and eventual falling from the perch — were more easily detected. Usually miners could withdraw to fresh air soon enough for the bird to recover.

Access to the tunnel was via an eighty feet deep shaft sunk just behind the front line. Smart had only climbed down half way when the canary showed that he could not safely remove his Proto set. He crawled the length of the tunnel which ran out one hundred feet beneath no mans land. This was short for a gallery to be charged, the Germans having reached so close to the British line, but the tunnel's size and condition made movement in a Proto set extremely difficult. The dimensions of the last forty feet of the gallery were just three and a half by two and a half feet with sides shaken by explosions and a floor strewn with rubble. It culminated in a sixteen feet long right angle chamber, all that remained of the defensive lateral. Smart noted the amount of oxygen taken to travel from the top of the shaft to the chamber so as to preserve sufficient to leave the tunnel. He allowed extra, 35-45 atmospheres, owing to the time taken in climbing the shaft and the number of men who would be at work in the small gallery. A sample of the air in the chamber was taken with a vacuum flask: the analysis showed 1.65% carbon monoxide, more than ten times the recognised dangerous concentration. So much gas was flowing in from the surrounding strata that two electric Holman pumps were insufficient to clear it.

Having carried out a reconnaissance of the galleries, Smart organised all his available Proto trained men. He combined his School personnel with 258 Company's Rescue Squad

giving him seventeen men together with Captain C C Henwood, their mine rescue officer. Two shifts of six men each were formed for work underground, one led by Smart, the other by Corporal Robert McDougal, the 258 Company rescue instructor. A dug-out for re-charging the Proto sets and resting the men as they came off shift was needed. The existing mine rescue station being too small, Smart took over an officers' dug-out one hundred and forty yards away from the shaft head. Here the Proto sets would be re-filled with caustic soda, cleaned and checked before re-issue. Sapper Arthur Trueman, regarded as responsible, with a trained assistant and a fatigue man were told off for this vital duty. Two remaining Proto men stood in readiness for emergencies and to treat any cases of carbon monoxide poisoning. Four Proto sets were kept spare in the dug-out, while a mine rescue stretcher and Novita oxygen reviving apparatus were placed at the bottom of the shaft. Smart arranged a system of signals for operating the winch: one pull on the signal rope meant 'stop', two 'lower' and three 'raise up'.

By 11pm over twelve hours after his arrival, preparations on the surface were complete and Smart was ready to take down the first shift. Their initial task was to clear obstructions from the cramped tunnel, which could foul the apparatus, and to tie an air hose and power leads to the sides. Electric safety lamps were fixed every few feet, candles could not be used owing to the risk of flammable gas. The largest falls of chalk were cleared and a sand-bag carpet laid. The two hour limit of the Proto set obliged the first team to leave the mine at 1am, on Monday morning 17 September. On emerging they were given hot coffee at the re-charging dug-out; heavy meals were prohibited during the operation. It was found that the tunnel was too cramped for the standard 50 lbs boxes of ammonal explosive. Smart decided instead to reduce the loads to 20 lbs before they were lowered down the shaft and had the explosives labouriously transferred into doubled sandbags.

After an hour's break, Smart took the second shift into the mine. The German miners could be heard clearly through the chalk but the loading of the explosives continued until 4am, by which time they had carried down 5,000 lbs. The detonators and primers were bedded into the charge but the bulk of the ammonal still had to be carefully loaded into the chamber. They were relieved by Corporal McDougal and the first shift who completed the careful packing of the greater part of the charge and left the mine at 6am.

At 7.15am Smart again went down to carry an air hose up to the charge. He hoped that the bags of ammonal at the end of the tunnel would seal off the flow of gas, like the sand stoppings used in a colliery, and fresh

air could then be pumped in to clear the gas. He emerged at 8am, bringing with him the electric lamps. The pumping continued all that day. In the afternoon Smart and Henwood brought back up the shaft twenty-five boxes of ammonal which had been carried down before it was realised that the tunnel was too cramped. This explosive was then shovelled into sandbags like the rest of the charge.

At 5.45pm Henwood took the first shift down to load the final 1,000 lbs of ammonal, completing the 6,000 lb charge. By 7.15pm they were ready to begin tamping the tunnel, starting with one hundred bags of clay. The tamping was vital to protect the British tunnel complex and to prevent the blast from simply being directed back along the heading. The broad barriers of back-fill were alternated with air spaces, the better to absorb the force of the explosion.

The ammonal had in the meantime failed to stop the blow of gas and the gallery remained unsafe despite pumping. The Proto men would therefore have to complete the rest of the tamping themselves. The expenditure of oxygen, caustic soda and electric lamps was beginning to outstrip available stocks and work was delayed while these were replenished from the Mine Rescue School. This gave the Proto men an enforced rest for the remainder of the day. At 10.30pm Smart took his pulse, having last worn the Proto set at 2.30pm for an accumulated total of six hours. He found that it was ninety, normally it was seventy-two. Wearing the apparatus for long periods was causing bad chafing around his armpits which he thought was probably caused by climbing the ladders up the shaft. As the caustic soda became exhausted, the air in the apparatus became gradually more moist; this caused catarrh in the throats of the Proto men which they dealt with while working by gulping saliva.

At 1am on Tuesday, 18th September, Smart took down the second shift. By 3am they had completed the first tamping block with solid chalk to a distance of thirty-five feet. There was now a threatening silence from the German miners which indicated that they had already laid a charge and withdrawn from their mine. After this shift Smart's pulse was eighty-eight, slightly lower than before.

By 10.50am the caustic soda for re-charging had arrived and Smart returned to the mine with the first shift. Leaving a ten feet space between the first block, they began another twenty feet of tamping. During this shift a Proto man unloading a bag of chalk at the bottom of the shaft caught the hook around his exhalation tube, which became kinked. Panic-stricken, he tried to struggle up the shaft ladder, breathing too rapidly for the regulated air supply of the Proto set. Smart told him to 'take it easily' and use his bypass valve to get a refresher of oxygen direct from

the cylinder. He made the man rest at the third landing of the shaft and they reached the surface safely. An NCO who followed the man up to give him confidence was also distressed by the incident. He went back underground but Smart also sent him up to rest for the remainder of the shift.

At 12.15pm Corporal McDougall took down three men from the second shift and, because they were now so tired, three fresh men, probably Sapper Trueman and the re-chargers. By 1.40pm they had increased the second tamping block to sixteen feet. The gallery was still gassed in spite of the constant pumping and the charge and most of the tamping in place. Smart sampled the air at the shaft bottom and found 0.92% carbon monoxide, well above the safe concentration.

At 4.15pm Captain Henwood, three men of the first shift and the re-charging men went down and finished the tamping right up to the shaft, with a layer of bags at the shaft bottom. By 6pm, fifty-five hours since Smart's arrival at Hill 70, the work was complete and the mine was ready to be fired. They had used eighty-six twin oxygen cylinders for the Proto sets and ninety electric lamps.

Simultaneous to this operation, 258 Company had been charging and tamping a smaller mine in a shallower heading to the left. Both were blown at 6.45pm; Germans could be heard working in their galleries right up to this time. The gas which had so dogged the Proto men was dramatically released by the explosion of Smart's mine. Second Lieutenant R L Ward of 253 Company

described the effect: 'In the case of the deep charge, a pillar of flame shot up expanding as it rose. It burnt like a blow lamp for quite ten seconds, and for a further ten seconds, a loud hissing of escaping gas was heard.' (Pope 1916: 4).

Pope added that ten seconds was probably an exaggeration.

Smart's deeper mine was believed to have destroyed the German workings, but the raised lips of the craters had to be rushed immediately so that their commanding height could be incorporated into the British defences. The 12th Suffolks, holding the line, sent forward a consolidating party who took the nearer lip of the crater, entrenched and wired it. The Battalion CO reported that Smart's mine had completely obliterated an earlier crater, while the other mine had left a smaller, oval crater. The two mines had also collapsed forty yards of his own front line.

The next day, 258 Company miners again heard the Germans working in their blown gallery. Three days later they managed to blow a small camouflet to the right of Smart's mine causing no damage to British workings. 258 Company responded with two mines, two days later, on 25 September. The situation remained critical at Hill 70 for the whole of the following month.

In his report Smart praised the Proto men: 'The whole of the work of the trained men employed underground was magnificent. Although the work was of such a fatiguing nature, there was no complaint of any sort raised, the work being carried on

with cheerfulness and resolution. I cannot speak too highly of them.' He singled out four for special mention. Corporal McDougall he described as invaluable: 'He worked during the whole time, with great keenness and energy.' The work of Sergeant F T Lambert and Lance-Corporal Ronald Lynch 'was worthy of the highest praise'. Sapper Trueman's care and skill in re-charging the apparatus was, said Smart, responsible in the first place for the success of the operation: 'He showed great keenness throughout, volunteering to go underground, when towards the end of operations, the men were extremely fatigued.' (Smart 1916: 3).

The four men were awarded the Military Medal and all survived the war. Rex Smart received a Military Cross, the citation of which paid tribute to his 'skill, courage and endurance'.

Sources:

Logan, D D 1918. *Mine rescue work on the Western Front*, Public Record Office W0161/86.

Logan, D D 1923. Chapters on mine gas poisoning and rescue in *Medical Services Diseases of the war Vol II*, (London: HMSO).

Pope, W A 1916. *258th Company RE Report on charging and tamping a gassed mine*, ms Public Record Office W095/406.

Smart, R C 1916. *Report on case of using self-contained breathing apparatus in mining operations*, ms Public Record Office W095/406.

Smart, R C 1921. *Recent practice in the use of self-contained breathing apparatus*, (London: Charles Griffin & Co).

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6-7	First World War event (80th Anniversary of the outbreak of War). Gun firing and Bovington's Mk IV tank. Fort Nelson, Fareham, Hants.	0329 233734			Bolsover Castle, Derbyshire.	
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6-7	The capture of Warkworth Castle 1644. The English Civil War Society at Warkworth Castle Northumberland.	0665 711423		14	Gun firing and Garde Imperial, Prussian Artillery at Fort Nelson, Fareham, Hants.	0329 233734
6-7	Soldiers of the King. American Revolution of 1776 at Sherborne Old Castle, Dorset.	0935 812730		16-19	The life and time of Charles I. The Friends of the King at Carisbrooke Castle, Isle of Wight.	0983 522107
6-7	Medieval life. Farleigh Hungerford Castle, Somerset.	0225 754026		20-21	The assault on Restormel Castle 1644. The Sealed Knot at Restormel Castle, Cornwall.	0208 872687
7	Military Vehicle Show at Imperial War Museum Duxford, Cambs	0223 835000		20-21	Firing the big guns. Portsdown Artillery Volunteers at Dartmouth Castle, Devon.	0803 833588
10-14	Archery and music from age of Richard III at Pevensey Castle, East Sussex.	0323 762604		20-21	Fifth annual Medieval longbow tournament. at Dover Castle, Kent.	0304 201628
13-14	The Essex Classic Military Vehicle Rally at Tilbury Fort, Essex.	0375 858489		27-28	Victorian Navy Days, HMS Warrior, Portsmouth, Hants.	0705 291379
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13-14	The fall of Bolsover Castle, 1644 The English Civil War Society at	0246 823349		28	Broadsword 94 Wargames, Loughton Hall, Rectory Lane, Loughton, Essex.	
				28-29	Medieval archery at Carisbrooke Castle, Isle of Wight.	0983 522107

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British Gulf War Uniforms (2), Filming 'The Charge of the Light Brigade' (1), WW2 Scottish Infantry Insignia, Models, Bill Horan & Derek Hansen, US Troops of Mexican War 1846-46 (2) Infantry, 1915-18 Photo Collection (1), William Coltman VC, 1918 & 1945.

MI/43

16th Lancers, Alwal, 1846, Filming 'The Charge of the Light Brigade' (2), German War Art, 1860s, Soviet Body Armour, 1915-18 Photo Collection (2), Euromilitaire '91 report, Models of Ron Tunison, Boabdil of Granada, 1483.

MI/44

US Troops of Mexican War 1846-48 (3), Dragoons, 17th Lancer, 1854, Reconstructed (3), US Pilot's Uniform, 1918, Plains Indian War-Shirts (1), Models of Brian Stewart, Bolivar's British Legion, English Civil War Exhibits from Lancashire, Ferdinand of Aragon, 1487.

MI/45

Plains Indian War-Shirts (2), US Troops of Mexican War 1846-48 (4), Zulu War on Film, 8th Jäger Bn., 1915, German War Art, 1870s, British Bayonet Carriage, 18th-19th Cs (1), Chicago Model Show, 1991, Philip Skippon, 1625.

MI/46

Roman Legionaires Reconstructed (1), German WW2 Campaign Shields (1), US Olive Drab Field Jacket, 1991 Sevres Model Show, English Soldiers, 1544, British Stormings, Peninsular War, 18th Century Riflemen, Philip Skippon, 1645.

MI/47

US Troops of Mexican War (5) State Volunteers, Medieval Siege Engine Reconstructions, Denmark & Czechoslovakia, Portuguese Paras, Africa 1961-74 (1), Models of Bill Ottinger, German WW2 Campaign Shields (2), Roman Legionaries Reconstructed (2), Cape Mounted Rifles Personalities, John Shaw, 1815.

MI/48

1st Canadian Para Bn 1942-45 (1), Legio II Parthica, 7e Regiment de Hussards 1808, US Troops of Mexican War (6), Early Use of Machine-Guns in British Army, US Commissary Sergeants 1873-1903, Portuguese Paras, Africa, 1961-74, Michael Wittmann.

MI/49

Imperial Guard Dragoon Helmets, 1st Canadian Para Bn (2), Wehrpass and Soldbuch, Rick Scollins Portrait, Territorial Bns, King's Regt, 1908-18, Roman Legionaries Reconstructed (3), US M1943 Field Jacket, Ben McCulloch.

MI/50

Fallschirmjäger, 1944-45, The Freikorps, Roman Legionaries Recreated (4), Royal Scots, 1815, British Army Manpack Radios, 1939-45, Dreyse and Chassepot needle rifles, Hector MacDonald.

MI/51

British Army Caricature, The British Resistance Movement, 1940-44(1), US 17th Infantry Regt, 1866-90, The Suffolk Regt, 1685-1913 (1), 17th Century Cuirassiers, Flak Jackets, Roman Legionaries Recreated (5), Ehud Barak.

MI/53

Essex's Foote, 1642-45, Paras in Normandy, 1944, Empresses' Dragoons Officers' Helmets, Cuera Cavalry (1), 15th King's Own Light Dragoons (Hussars) (1), Artillery at Edgehill, 71st Highland Light Infantry, NW Frontier, Sir Peter de la Billière.

MI/54

15th King's Own Light Dragoons (2), SS Totenkopfring, British Paras, 1940-42, The King's Lifeguard of Foote, US Heavy Artillery Uniforms, 1866-76, Cuera Cavalry (2), 17th Century Buff Coats Recreated, Philip II of Macedon.

MI/55

The art of Chris Collingwood, The First China War, 1840-42, The King's Lifeguard of Horse, 1642-45, British Troops on Campaign, 1775-81, The Union Cavalryman, 1861-65, The London Regt, 1908-37 (1), German Field Caps, 1933-45 (1) Army, Greek Cypriot National Guard, John Urquhart.

MI/56

Euro-Militaire report, The London Regt (2), Argentine 25th Inf Regt, 1982, 15th King's Light Dragoons (3), Irish in Venetian Service, 1702-97, German Field Caps (2) Luftwaffe, The Czech Legion (1), The Guides at Kabul, US 17th Inf Regt Officers' Uniform, 1866-90, John Palmer Brabazon.

MI/57

Royal Canadian Naval Beach Commando 'W' (1), Chicago Model Soldier Auction, The Czech Legion (2), 17th Century Footwear Reconstructed, The London Regt (3), British Army Musicians in the 18th Century (1), German Field Caps (3) Navy & Waffen-SS, US 1st & 2nd Cavalry Regts, 1855-60, Archduke Charles of Austria.

MI/58

Quebec Voltigeurs, 1812-15, German Field Cap Insignia, 2/87th Foot in the Peninsular, Battlefields of the English Civil Wars Today (1), British Infantry Musicians, 18th Century, Royal Canadian Beach Commando 'W' (2), 14th/19th King's Hussars, Gulf War, Chicago Show Report, The London Regiment (4), Theodore Eicke.

MI/59

1st SS Division Leibstandarte 'AH', Sharpe and Harper March Again, The Bren LMG, Military Model Showcase, Battlefields of the English Civil Wars Today (2), The First Tank Battle, Royal Canadian Beach Commando 'W' (3), Geoffrey Keyes, VC.

MI/60

Panzergrenadier Division 'Grossdeutschland', 95th (Rifle) Regt of Foot, King James' Foot Sedgemoor, 1685, US Army Medics, 1857-87, 14th Century Cavalry Warfare Mamluks, Robert E. Lee.

MI/61

New South Wales Lancers (1), Croatian Warrior 9th-14th Centuries, Virginia Militia, Battlefields from the Air, King James' Foot (2), 95th (Rifle) Regt (2), SS-Feldgendarmarie, US Army Medics (2).

MI/62

Infrared Surveillance (1), New South Wales Lancers (2), Royal Guards of France (12), Germany's Dunkirk, 1945, Croatian Warrior 1400-1600, London Regt, 20th-34th Bns.

MI/63

Military Museum Guide, Royal Guards of France (3), Infrared Surveillance & Concealment (2), Croats in the 30 Years' War, German Ribbons & Awards for Valour, 1933-45, The Cheshire Volunteer Regt, 1914-18, Afghanistan's Highland Guard.

MI/64

Royal Guards of France (3), The Scinde Campaign, 1843, Vietnam (ARVN) Marines, Lancashire Hussars (1), SS Palm Tree Camouflage, Artillery Forts at Deal & Walmer, Veterans of Kirbekan, The Young Alexander. MI/65 Royal Guards of France (4), Gwalior Campaign, Croatia's Military Border Territory, Luger Lange Pistole '08 (1), Brudenell and Nolan (1), Lancashire Hussars (2), The Young Napoleon.

MI/66

German Guerilla Warfare Badge, Brudenell and Nolan (2), Royal Guards of France (5), Croatia and the 'National Idea', Gommecourt 1916, Luger Lange Pistole '08 (2), Egyptian Campaign 1882 (1), Hiram Ulysses S. Grant.

MI/67

Egyptian Campaign 1882 (2), British Officers' Uniforms 1795-1814 (1), 18th Century Highlanders, Armies of Akritoi, Body Armour 1915-45, The War in Yugoslavia 1941-45 (1).

MI/68

French Carabiniers, 1866, Geronimo, 1st Infantry Div, Sicily (1), Knirjas of Krajina-Serbia (1), British Officers' Uniforms 1795-1814 (2), The German War in Yugoslavia (2), Croatia in WWII, Georgi Zhukov.

MI/69

Polish Winged Hussar, 1st Northamptonshire Yeomanry, French 3rd Cuirassier Regiment, Tito's Yugoslavia to Present, British Army Uniforms 1795-1814, Serbian Warriors, Rufus Lathrop Baker.

MI/70

Zulu War Dress, 1st US Volunteer Cavalry 1898, Warriors from South Seas War 1881, New British Army Combat Uniforms, 1st Canadian Infantry Division 1943, Brunswick Light Infantry Battalion 1776, Stanley L. Wood, Gothic Knight, Panzerfaust.

MI/71

Sharpe at Badajoz, Disaster at D-Day, Ninth and Tenth US Cavalry, 1866-1903, Korean Warfare, 1592, 68th Regiment of Light Infantry, 1814, Pictish Victory, AD 685, Bryan K. Fosten, Lewis Gun.

MI/72

US uniforms and weapons, June 1944: re-enactment in the 1990s; Mongolian Civil War 1920-21; Rhodesian helicopter operations 1962-80; Major Henry Shelley Dalbiac; Macedonian warriors, 3rd century BC; Henry Alexander Ogden; Colt Automatic in British Service.

MI/73

British and Canadian DD Tanks; The 95th (Derbyshire) Regiment 1854-55; D-Day book feature; Japanese Siegfraft, 16th century; Special Forces Camouflage. Isandlwana and Rorke's Drift From the Air; Horses on the Battlefield; Rex Whistler; Early Smith & Wesson Handguns.

MI/74

French Resistance units, 1940-44; Celts and Romans; Medieval monastic battles; Pathan Revolt, 1897-98; Mamluk costume, 1432-33; Steam Engines in the Boer War; Ardennes Battlefield tour; Ray Newell; Roman Archery Tested.

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There seems to be little doubt that the arms, armour and militaria market shows consistent signs of an improvement with a fairly slow but steady rise in dealing. One of the indications of any good sale is the speed of bidding. On occasions the auctioneer has to drag bids from a reluctant room and each one is pulled from the bidders rather like a tooth. At good sales the bidding runs along, not so much fast, as smoothly. Every now and then a lot will excite the room and then the bidding does speed up and a hushed expectancy gradually settles down in the room.

A good auctioneer can help the bidding along by his style. It is difficult to pin down what makes a good auctioneer but there is no doubt that some seem more able to coax bids easier than others. Sometimes they are accused of taking bids from the wall, lamps or other objects in the room. It is extremely unlikely that this happens for not only is it unethical but it is a risky business since a wrong move and the lot could well be knocked down to a fictitious buyer leaving the house having to pay the vendor. When the auctioneer seems to be taking bids from nowhere he is usually being briefed by the clerk sitting next to him who is handling the commission bids. These are bids written or phoned in prior to the sale. They are duly recorded and the clerk will enter the bids as per his instructions as and when appropriate. He will only take them up to the maximum authorised by the bidder. In the case of two similar bids being received for the same lot precedence is usually given to the first received. It should also be pointed out that postal bids are treated exactly the same way as bids in the room. The lot is knocked down to the last bidder and the selling price is that

amount. If a postal or commission bid stands at £400 it does not mean that the auctioneer will push the bidding until that is the price achieved.

The larger well established rooms have a reputation to maintain and make every effort to ensure fair practices. One unfair practice that they do their best to prevent is the so-called ring. One system is for a group of dealers to agree that they will not bid for a certain lot leaving the way clear for just one bidder. Another scheme is for the group to agree that one dealer will buy the object and then they will hold a separate, private auction after the sale. The members of the ring then agree on a cash settlement so that each member benefits. When this happens the rooms lose their commission whilst the vendors also loses because the hammer price is certainly less than the price paid by the ring in the rooms. The difference between room and ring price can run to thousands of pounds.

There was no sign of such practices at the sale of medals, arms, armour and militaria held at Southeby's rooms at Billingshurst on Monday 9th May. There were 165 lots of medals and the top price of £16000 went to a Dickinson medal awarded to a dog serving with the RAF during World War II. The alsatian survived the war in France and with his Czech master served with the RAF and logged up seven bombing missions and was twice wounded. After the war, owner and dog returned to Czechoslovakia but were forced to flee from the Communists. Returning to England both re-enlisted in the RAF and the dog lived until 1963.

Militaria sold well with badges continuing to fetch high prices and a Victorian XIth Madras infantry shako badge

sold at £600, twice the top estimate. The sabretache and back pouch previously owned by Field Marshal Earl Roberts made £1050. A Victorian Blue Cloth helmet of the Third Royal Guernsey Militia realised £520.

A slightly unusual piece was an embroidered purse or *etue* with six pockets each decorated with flags and battle honours of the 53rd Regiment. It obviously aroused interest since it sold for £360, over twice the estimate.

Among the edged weapons was a very fine Imperial German 1889 Presentation sword with blued and gilt blade bearing an inscription dated 1904. It was complete with its scabbard and sold for a very good £1600 — three times the estimate.

Unusual and complete was a glazed case used by a retailer to display a stock of Bowie knives. It contained fifteen knives all by the famous maker Wolstenholme and bearing his trade mark IXL which according to the legend on the door indicated that all were genuine. This piece sold for £3000 — the lower estimate.

The sale was unusual in the number of cased sets of pistols

being offered and it might be expected that the sheer number might have reduced demand but this was not the case. A good cased pair of 16 bore flintlock duellers by Mortimer complete with all accessories sold at £4500. Similarly cased pairs of duelling pistols by Ketland and Mortimer sold for £4000. A cased pair of flintlocks by Rigby went for £1450 and a pair of flintlock belt pistols by Wilson realised £2100. A very fine cased bar hammer percussion pepperbox revolver complete with all accessories made an extremely healthy £1850. Flintlock blunderbusses, as always, sold well and two by Ketland sold for £1000 each.

More ordinary pistols shared in the good prices and a fairly standard 12 inch barrel flintlock Sea Service pistol dated 1803 sold at £750. An ordinary flintlock pistol with some restoration still realised £220.

In all a good sale with some very good prices and few unsold lots. The problem today is not the selling but rather the finding of new material to offer. Frederick Wilkinson

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